Total vegetation cover soil protection Region:NRM Riverina NSW

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

Date: April 2006

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
 - 51-70% Moderate cover protected from wind erosion
 - 31-50% Low cover not protected
 - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3





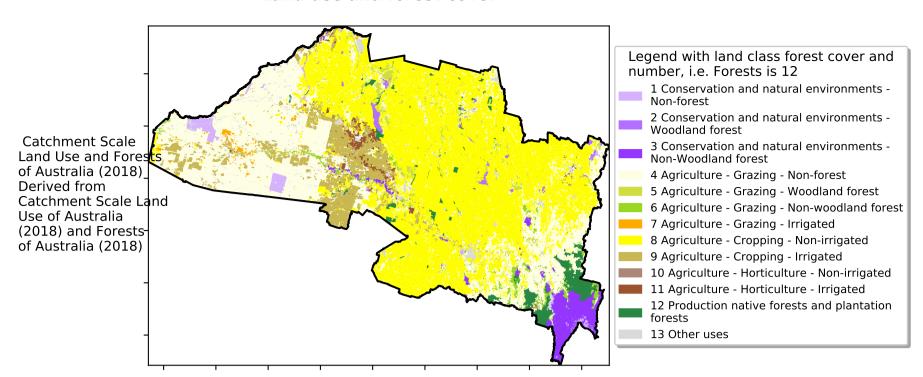




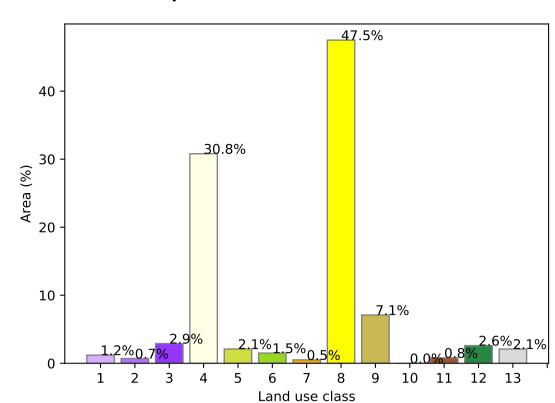


Vegetation Cover Apr 2006

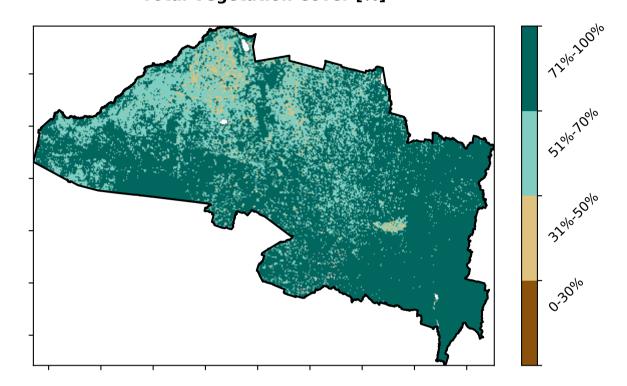
Land use and forest cover



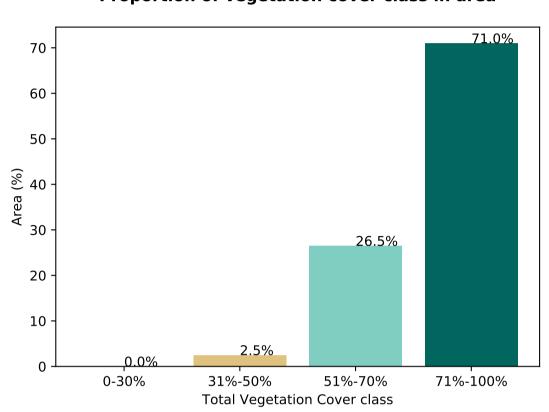
Proportion of each land class in area



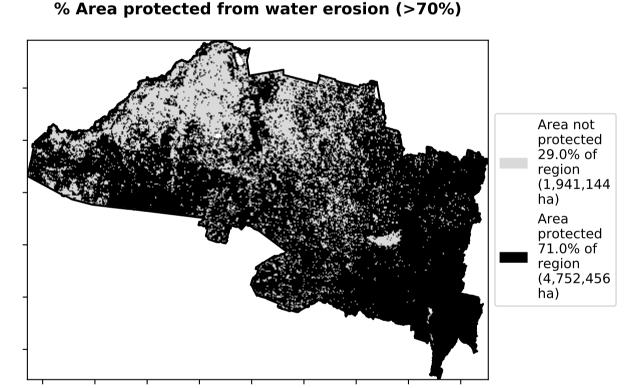
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



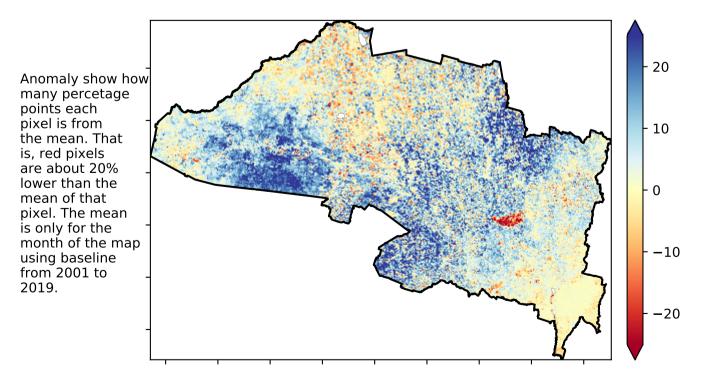
0/ Aven protected from water evenier (> 700/)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



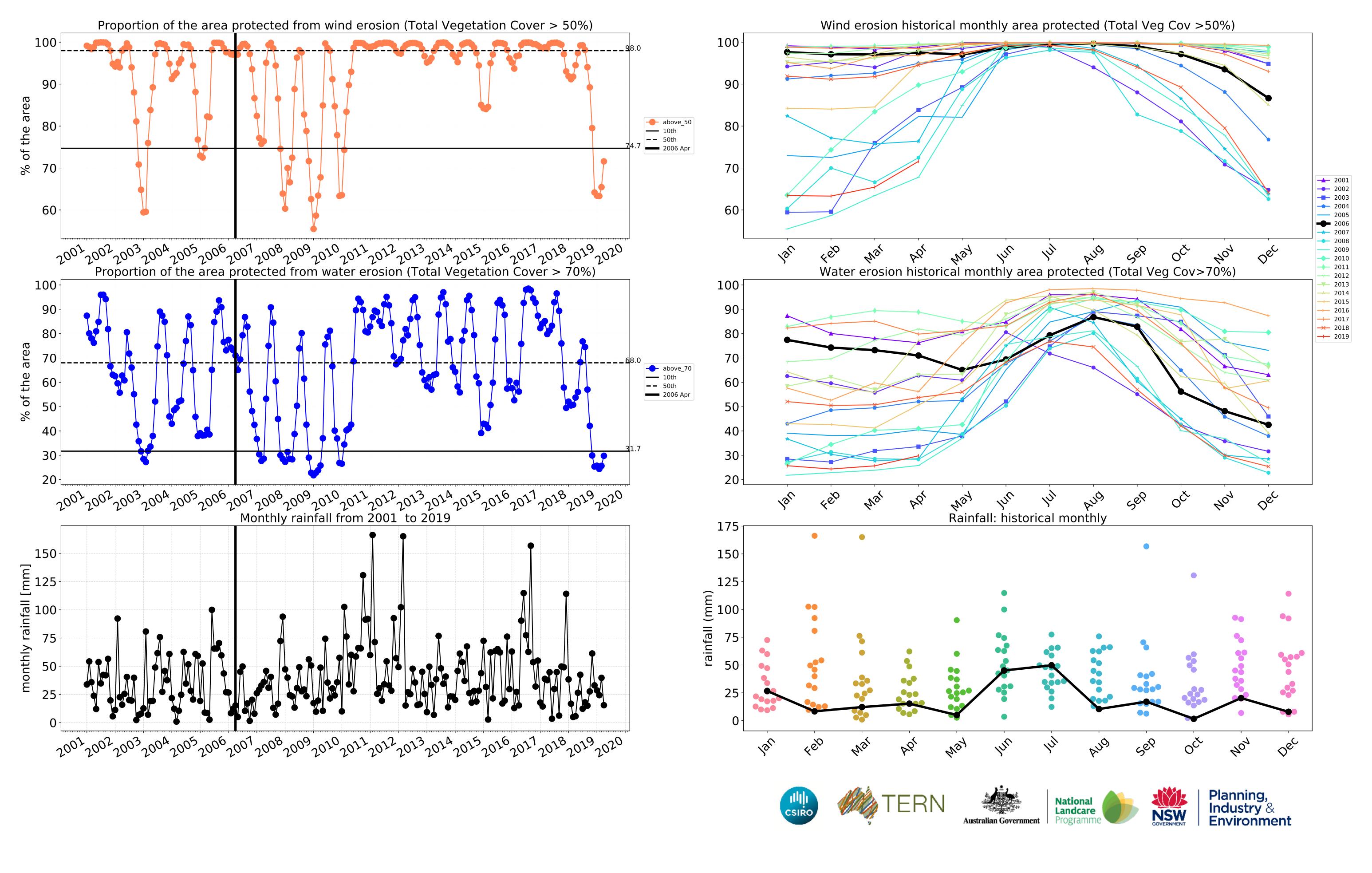




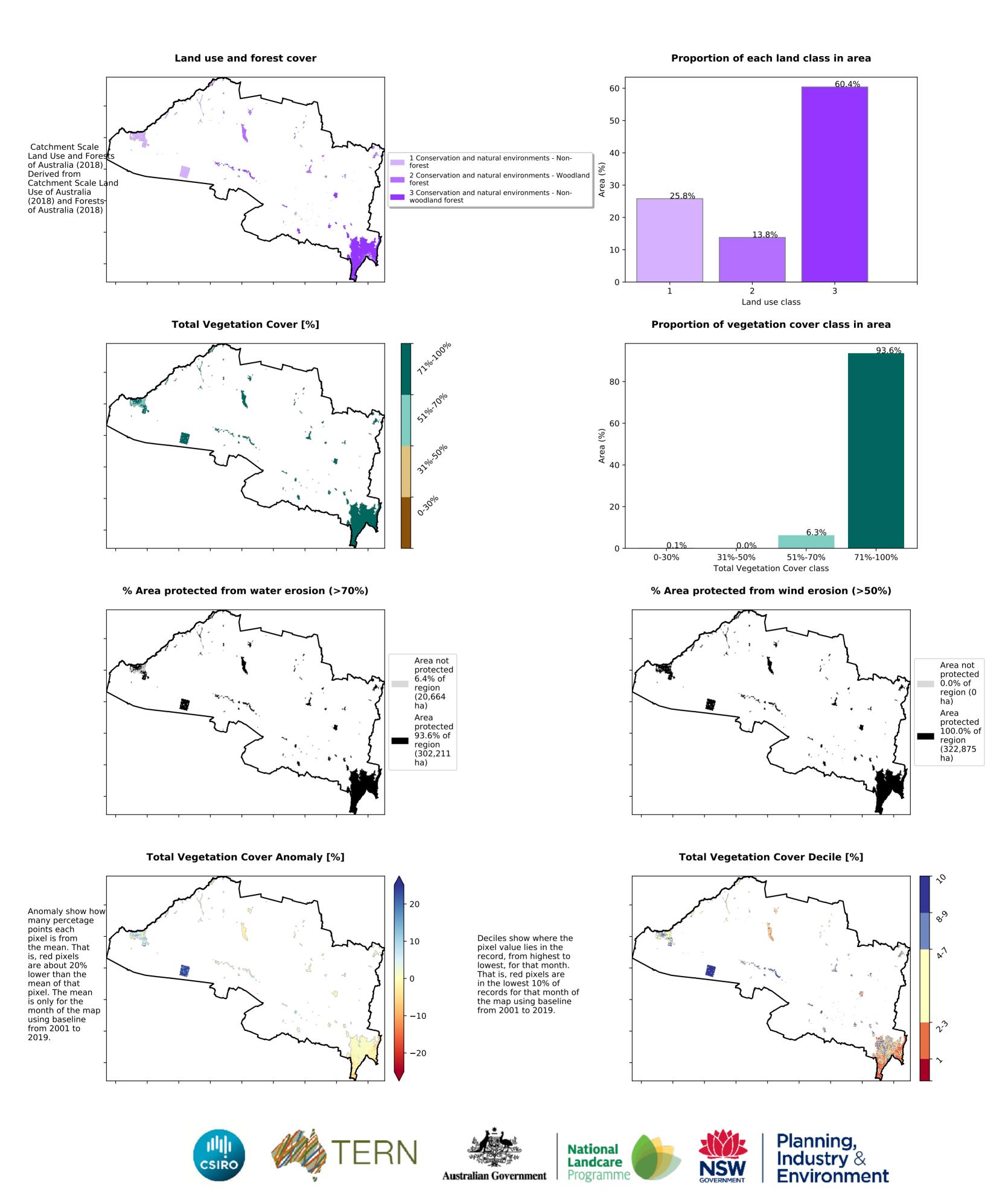




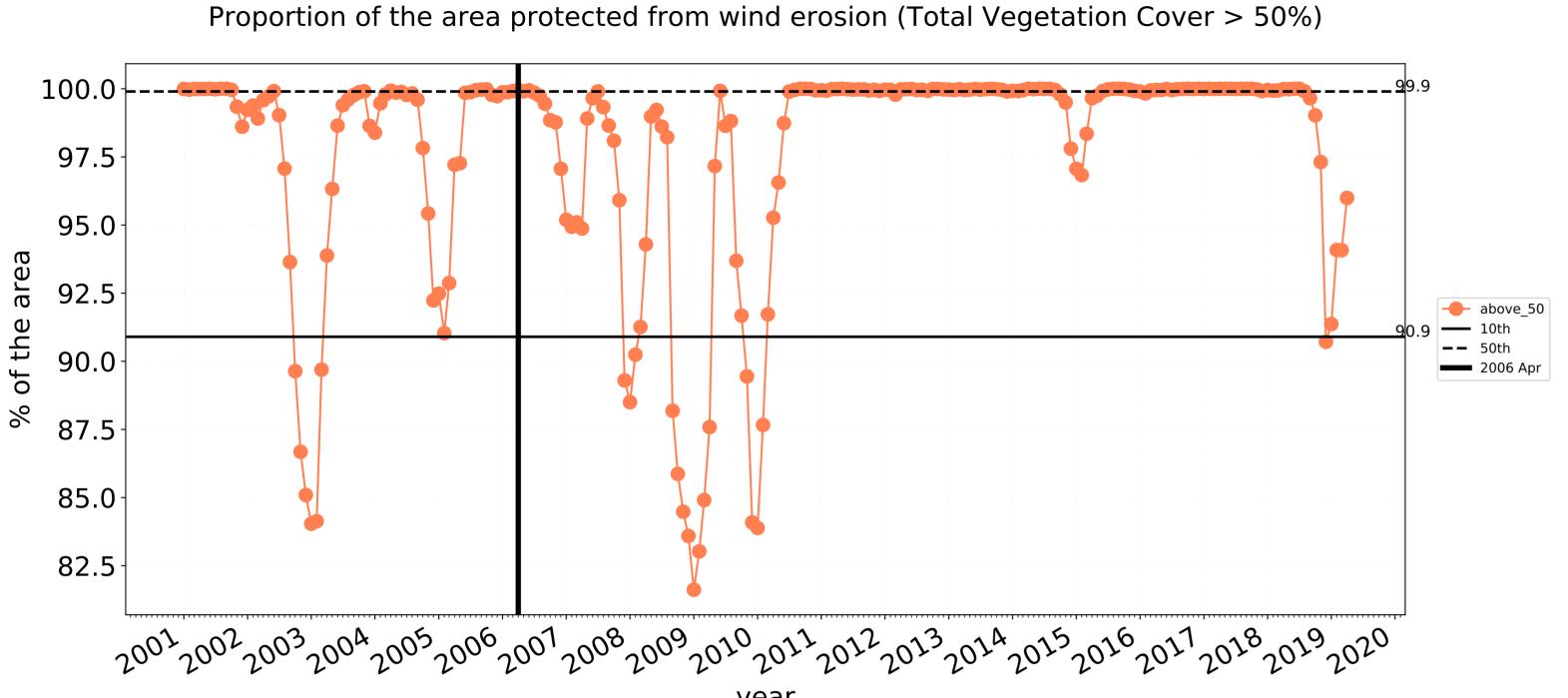




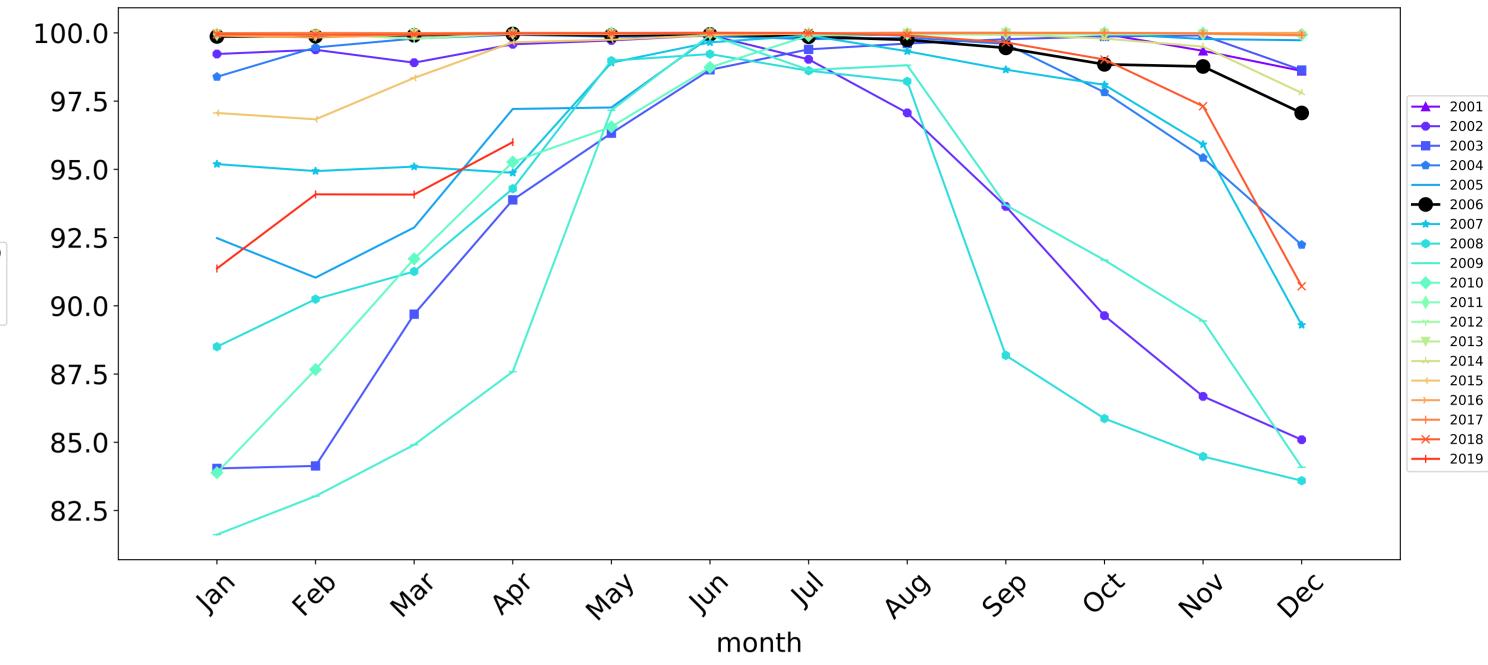
Conservation and natural environments

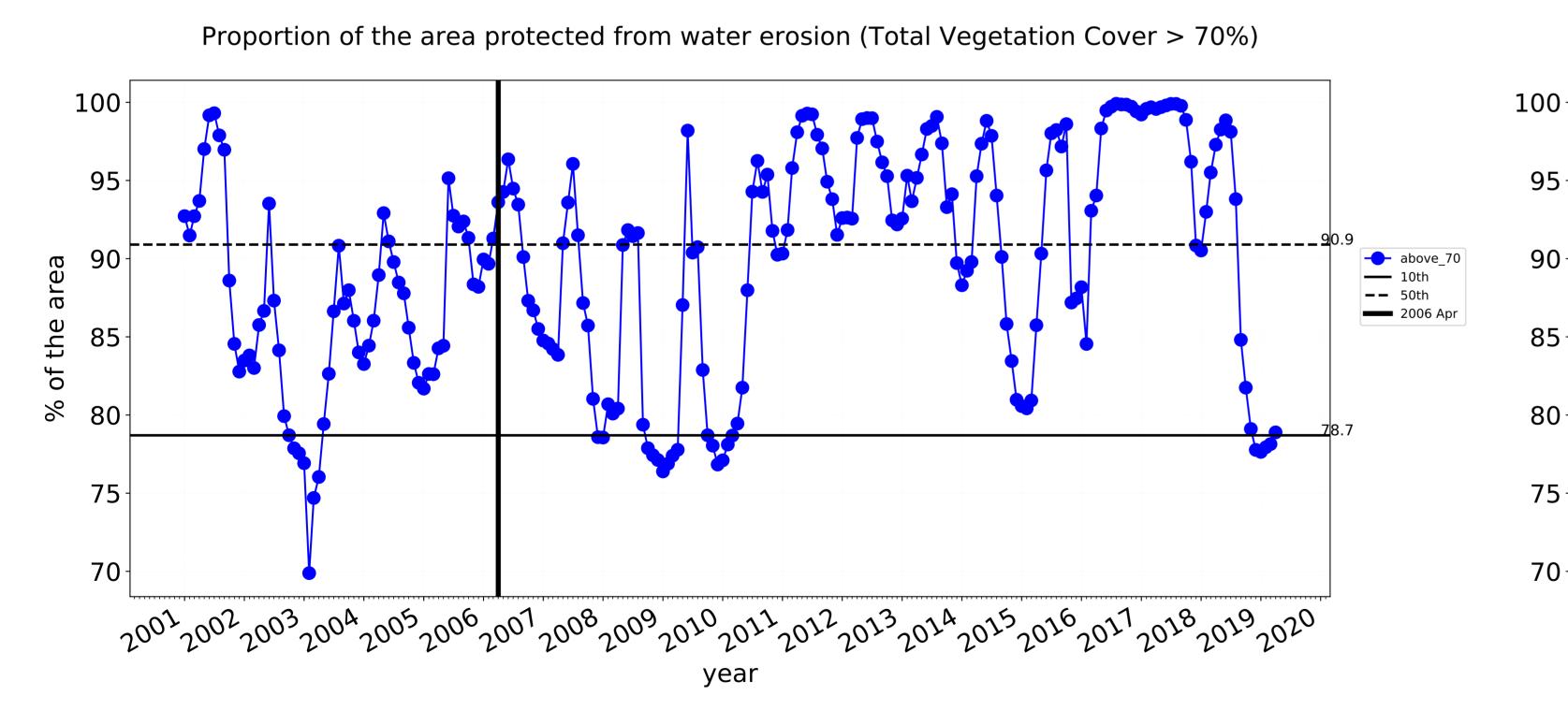


Conservation and natural environments timeseries

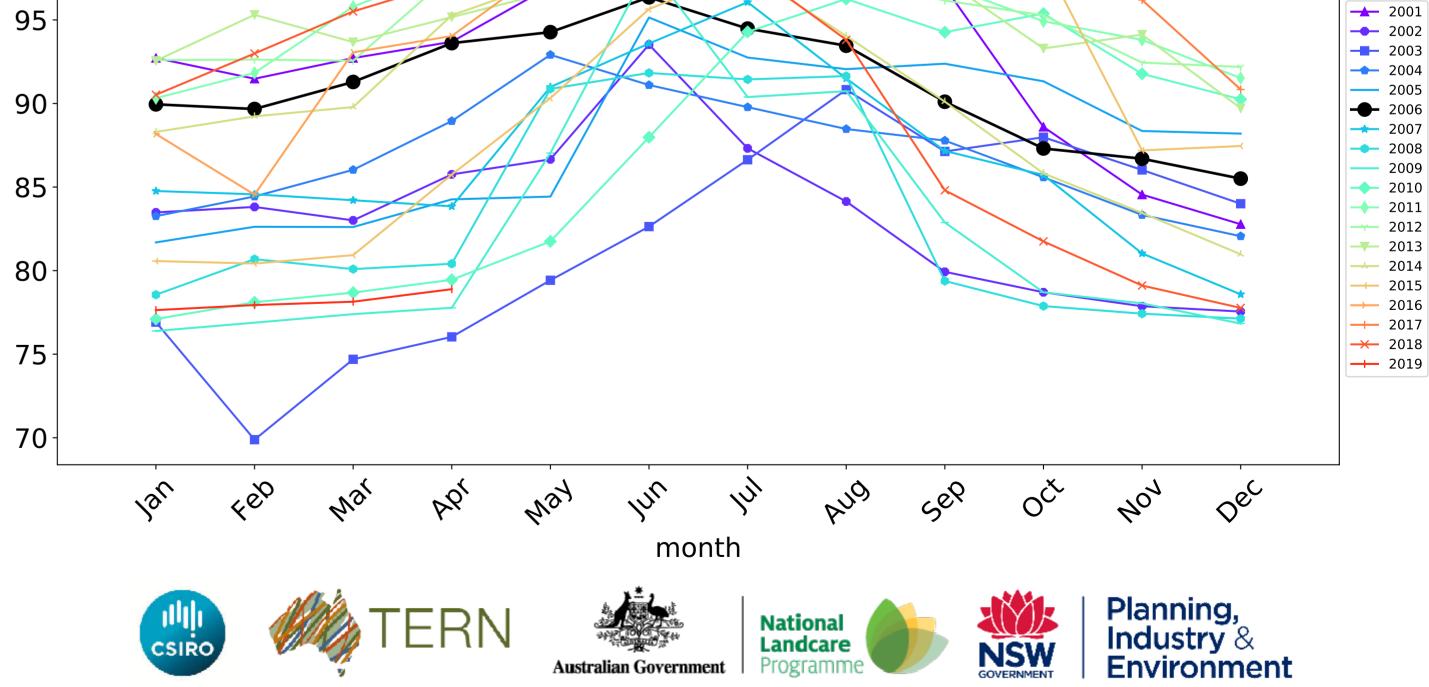


Wind erosion historical monthly area protected (Total Veg Cov >50%)





Landcare



Water erosion historical monthly area protected (Total Veg Cov>70%)

Conservation and natural environments non forest

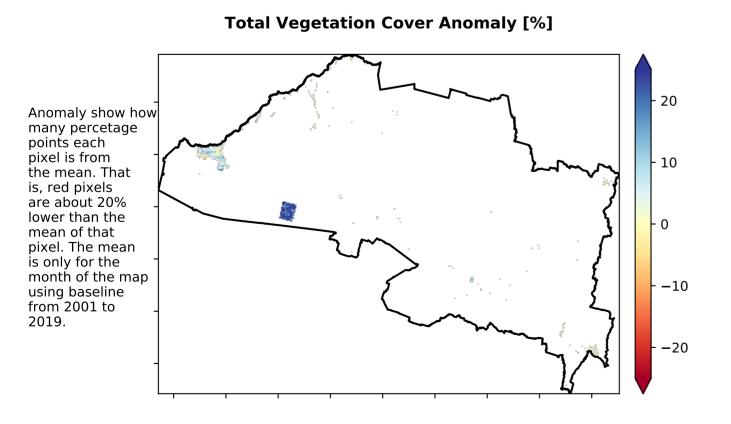
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Non-Catchment Scale Land

Total Vegetation Cover [%]

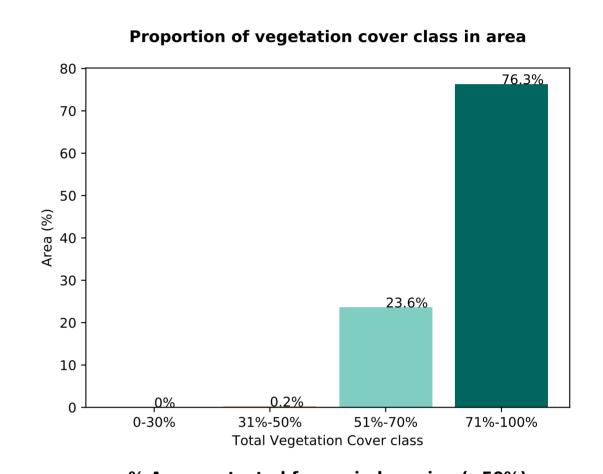
Derived from

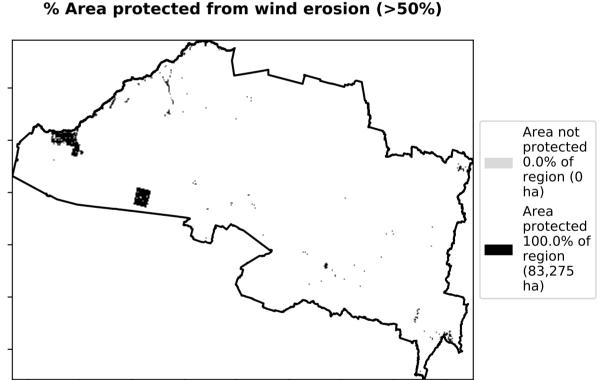
Use of Australia (2018) and Forestsof Australia (2018)

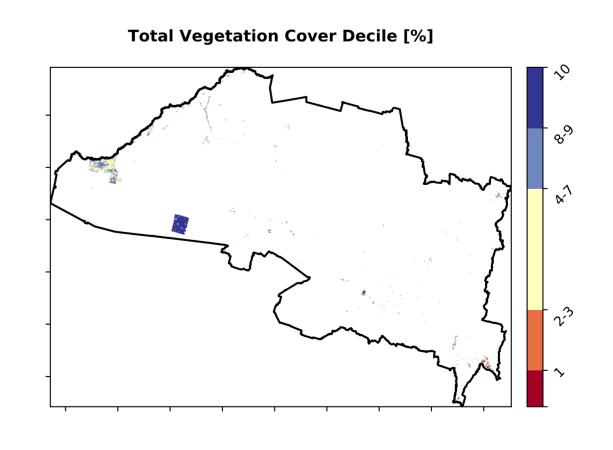
% Area protected from water erosion (>70%) Area not protected 23.7% of region (19,736 ha) Area protected 76.3% of region (63,538 ha)



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.











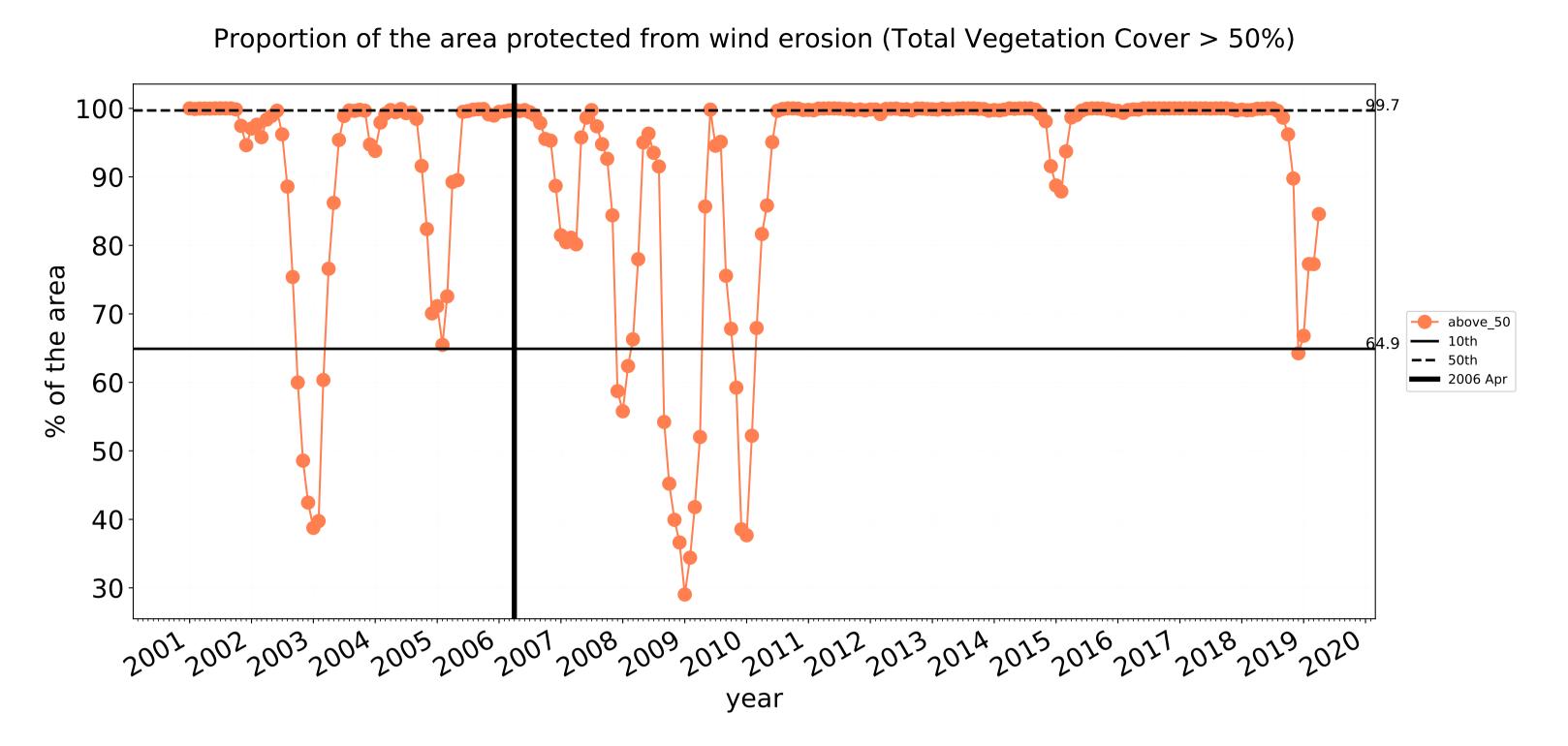


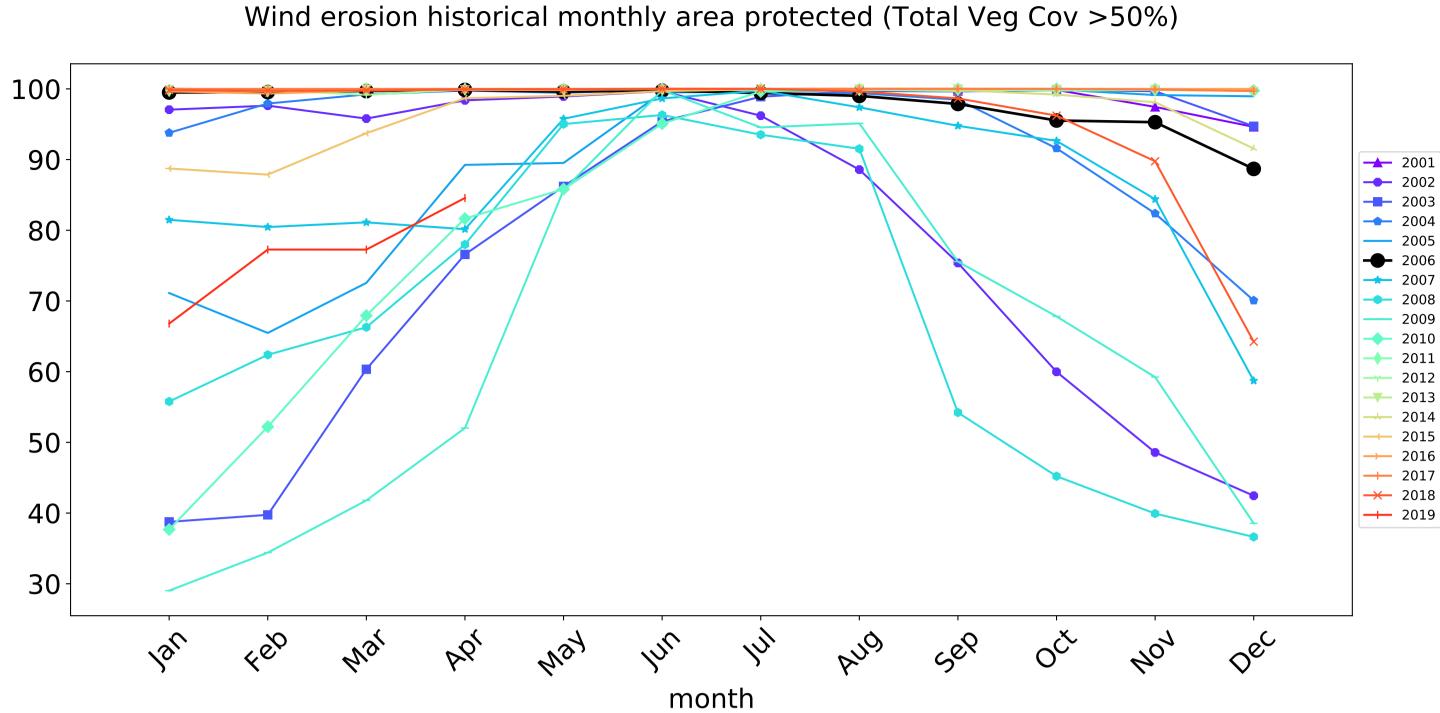


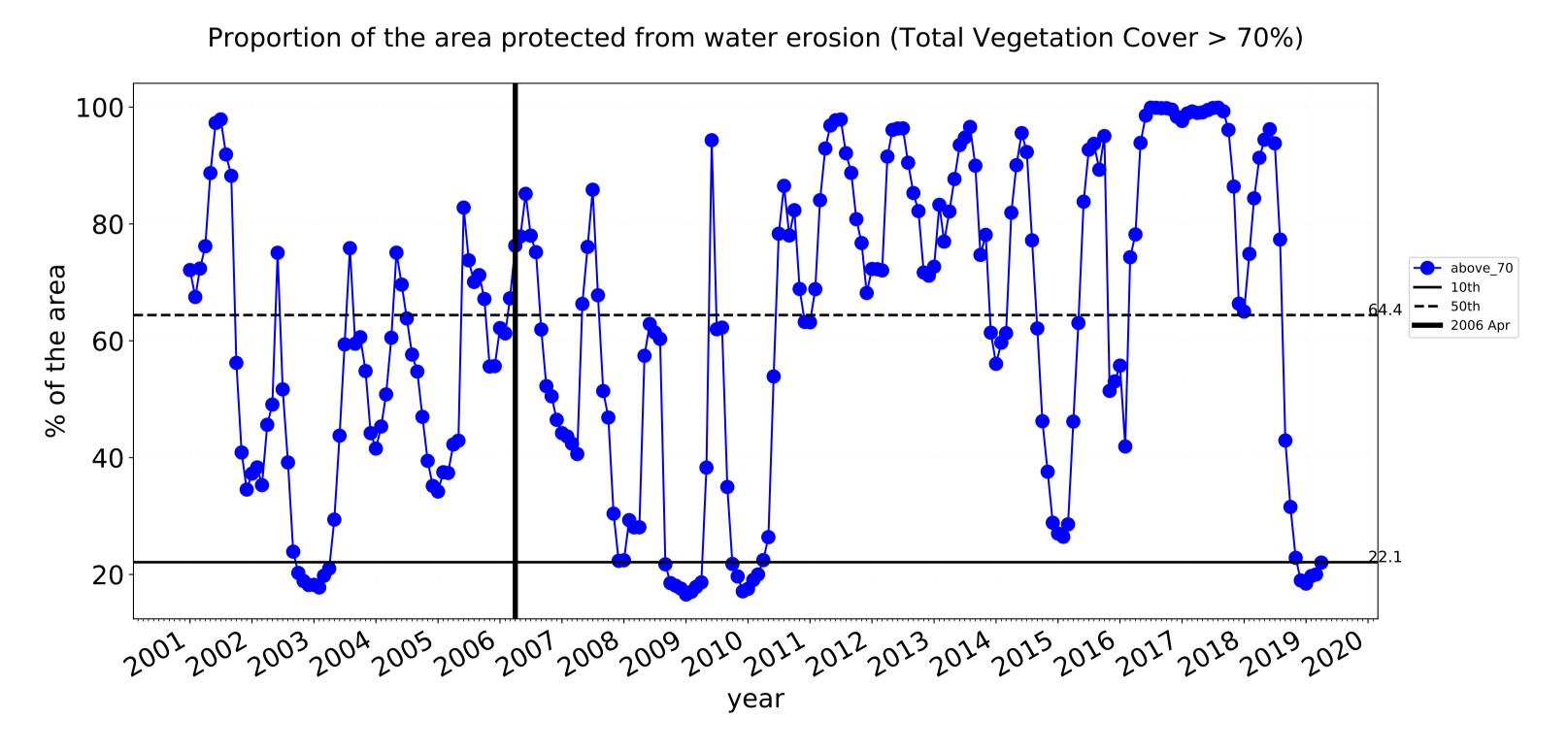


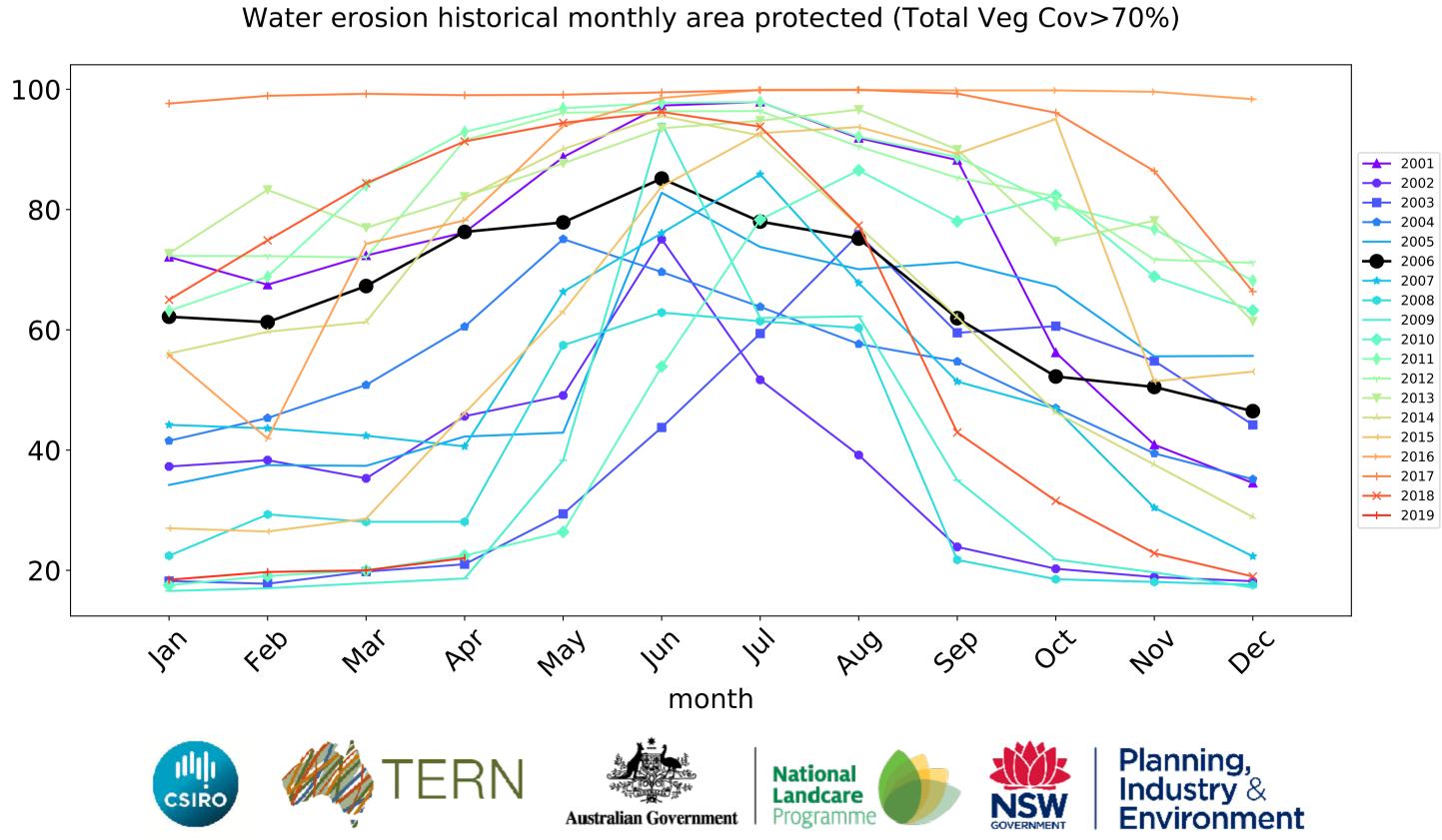


Conservation and natural environments non forest timeseries

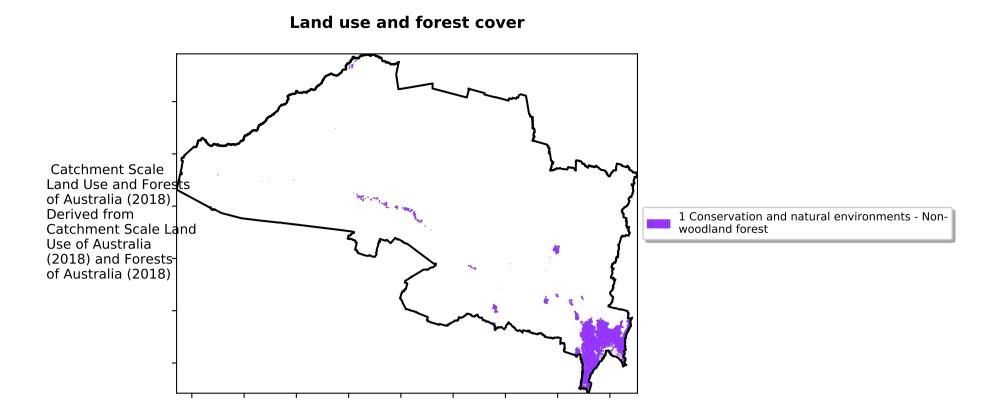




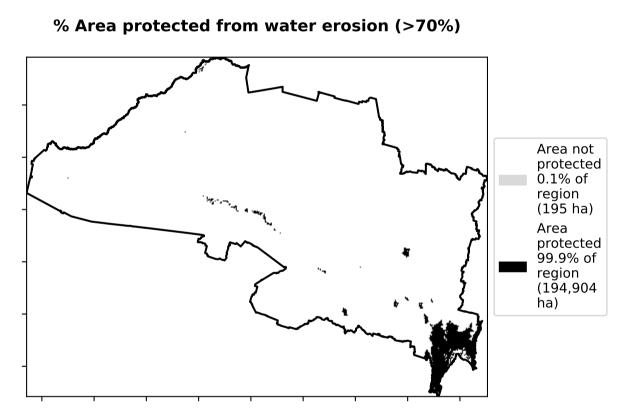


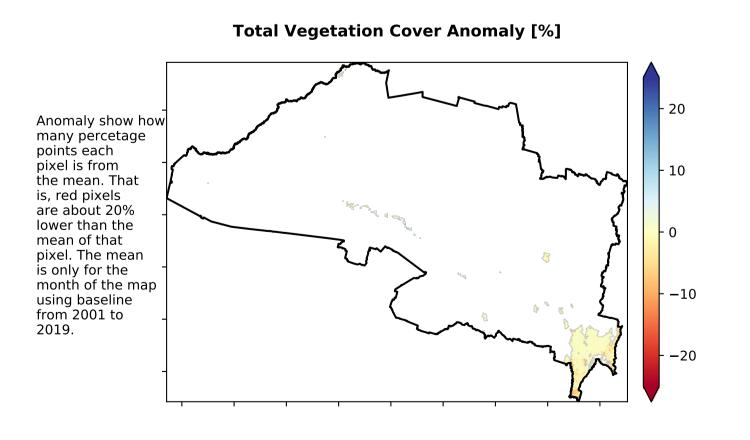


Conservation and natural environments Forest (non woodland)

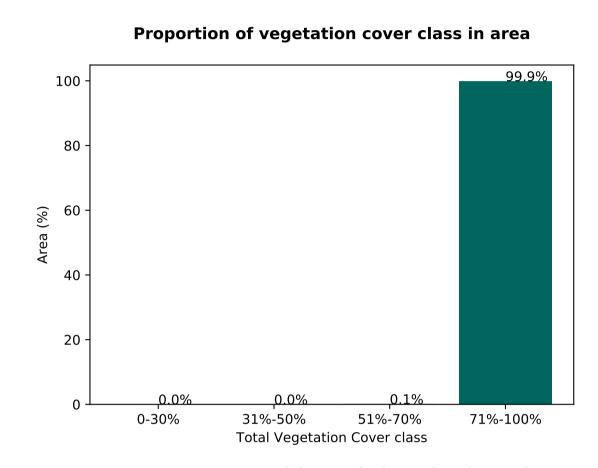


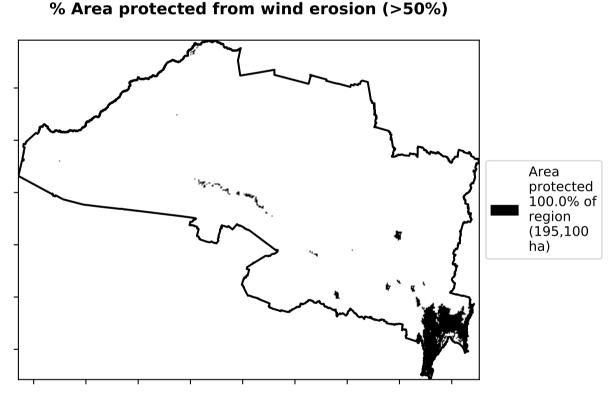
Total Vegetation Cover [%] Total Vegetation Cover [%] Tiple toole T

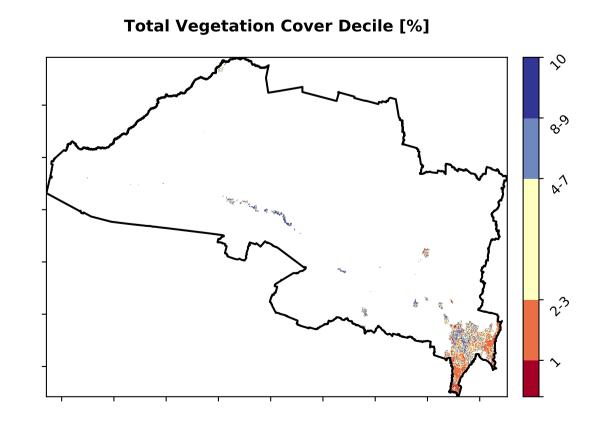




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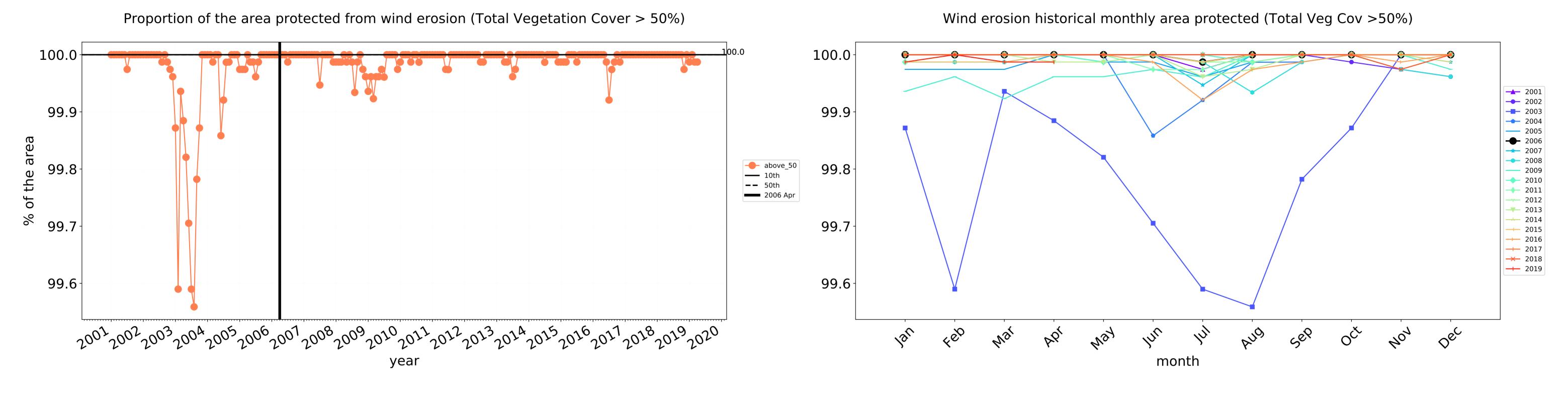


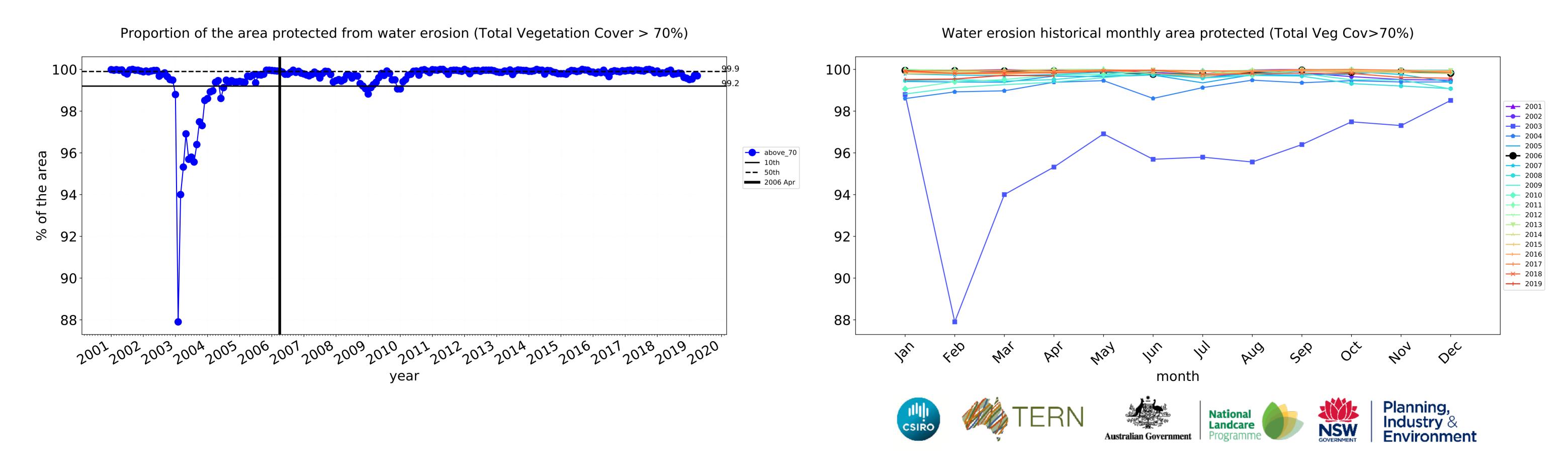










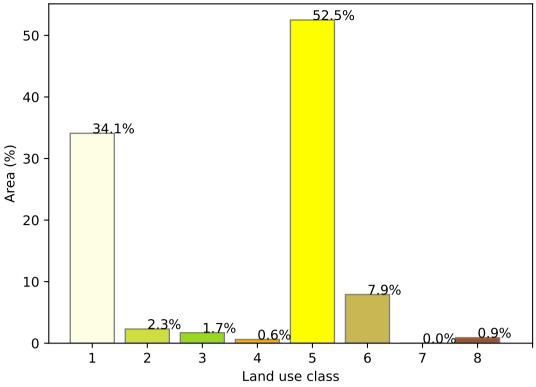


Agriculture

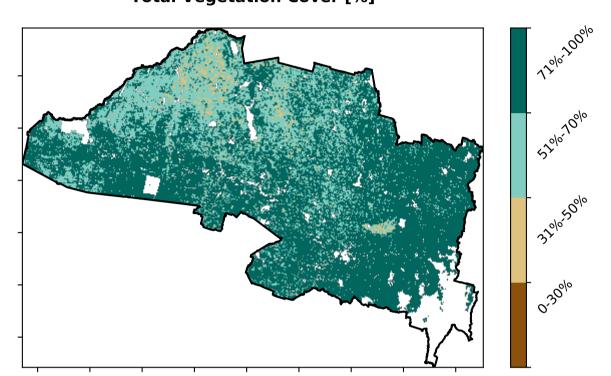
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from 4 Agriculture - Grazing - Irrigated Catchment Scale Land Use of Australia 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated (2018) and Forests-7 Agriculture - Horticulture - Non-irrigated of Australia (2018) 8 Agriculture - Horticulture - Irrigated

50 40 34.1% Area (%) 0

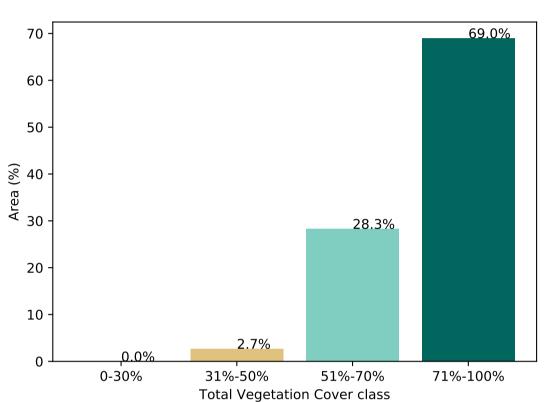
Proportion of each land class in area



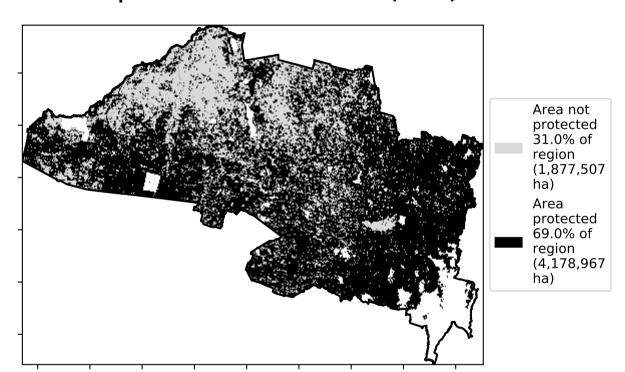
Total Vegetation Cover [%]



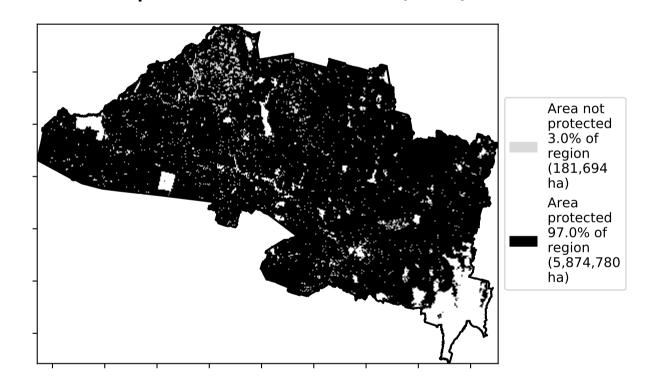
Proportion of vegetation cover class in area



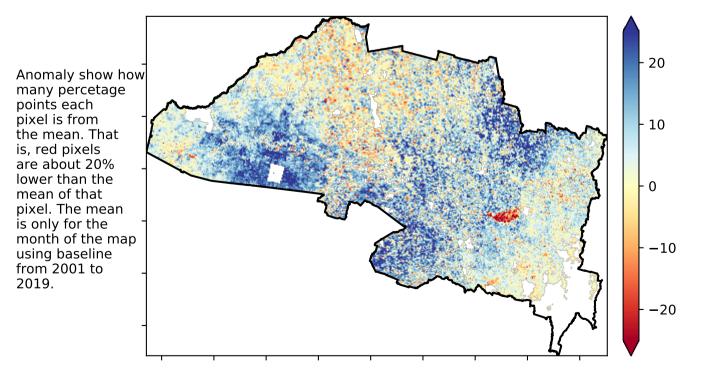
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]





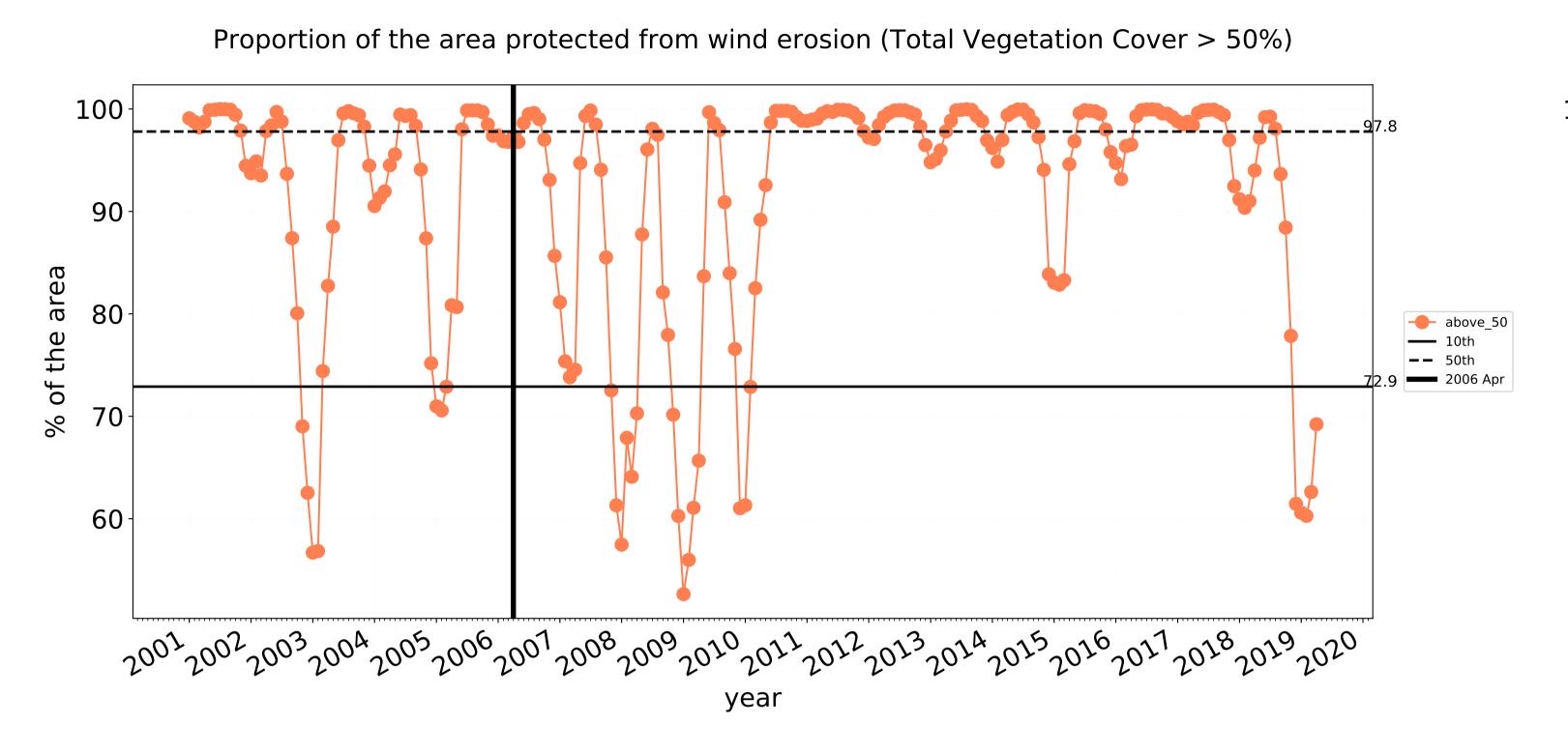


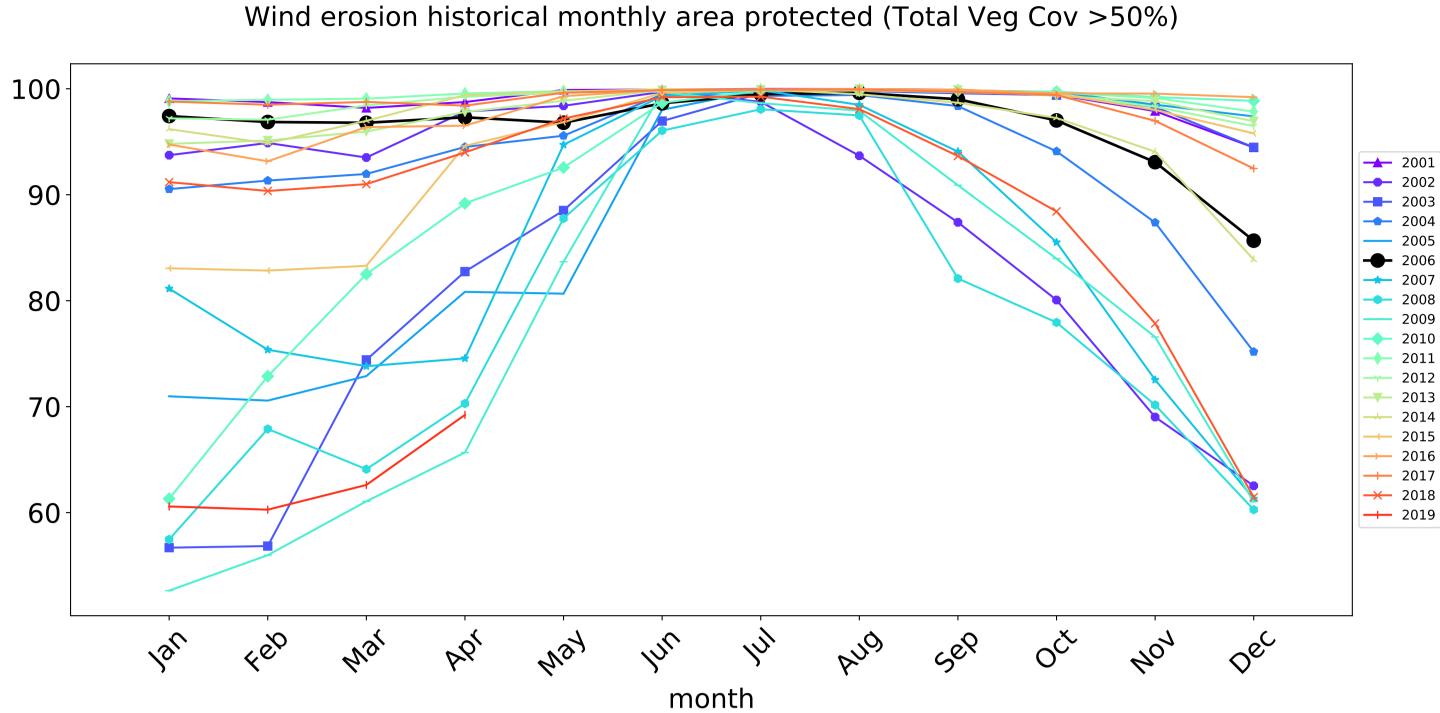


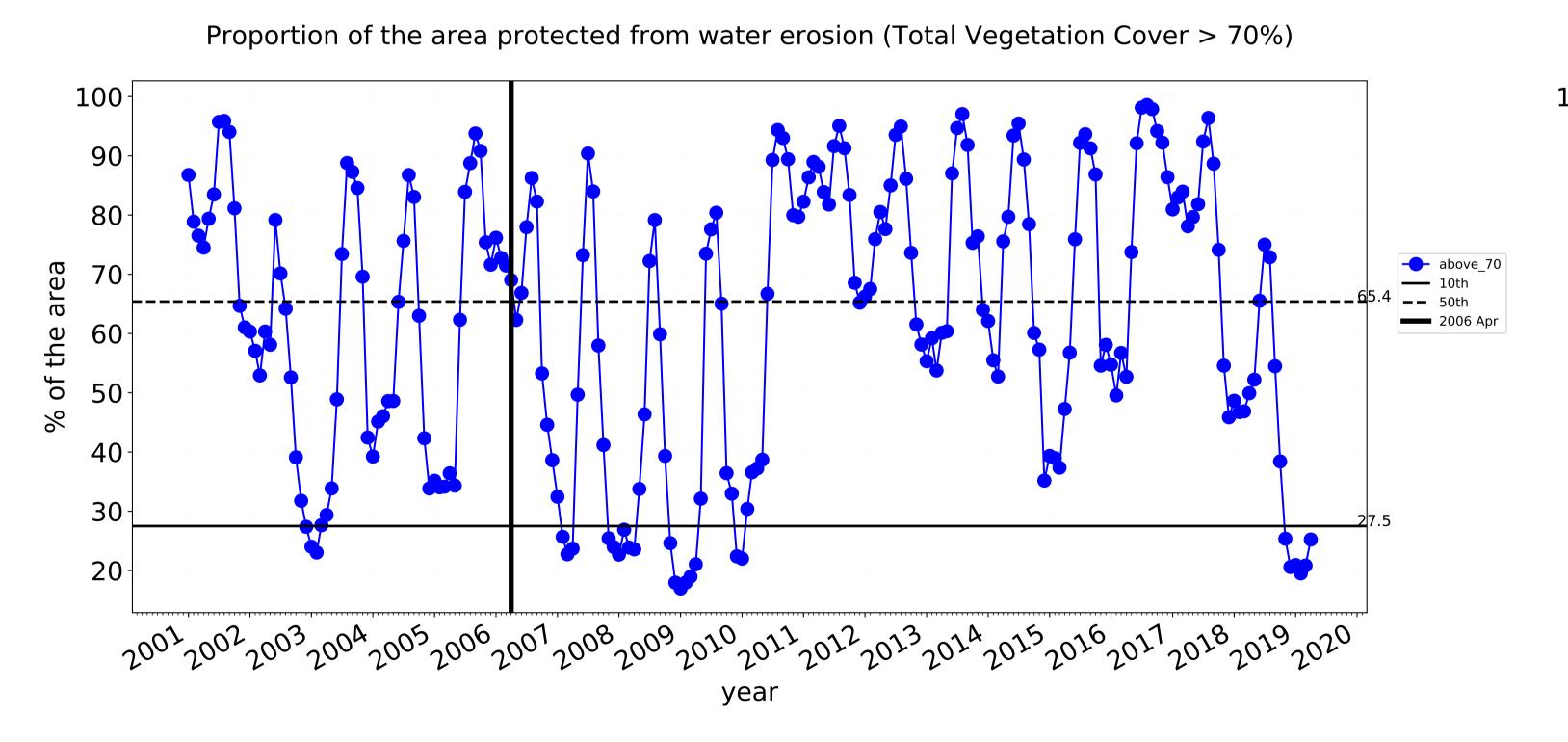


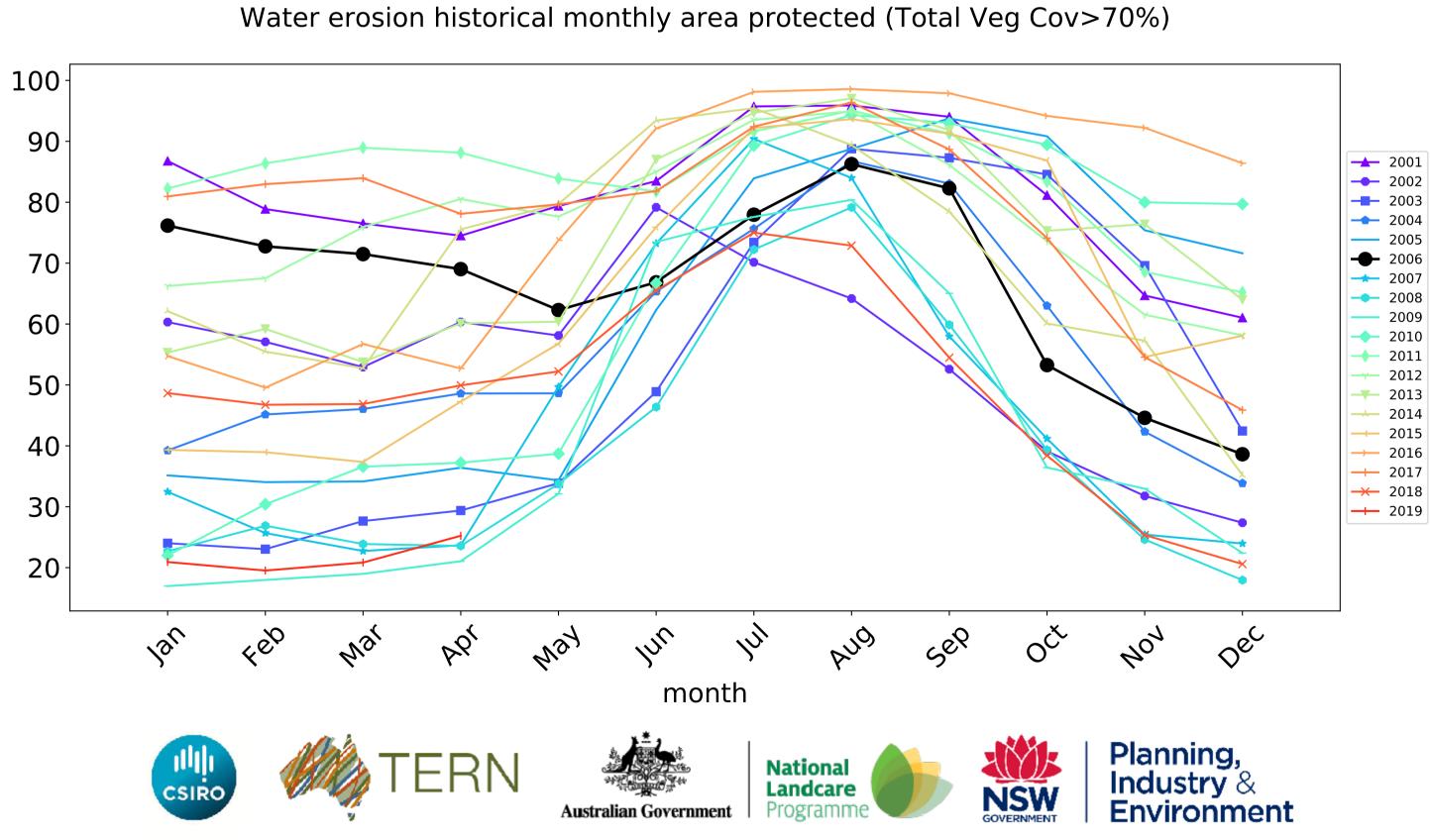


Agriculture timeseries







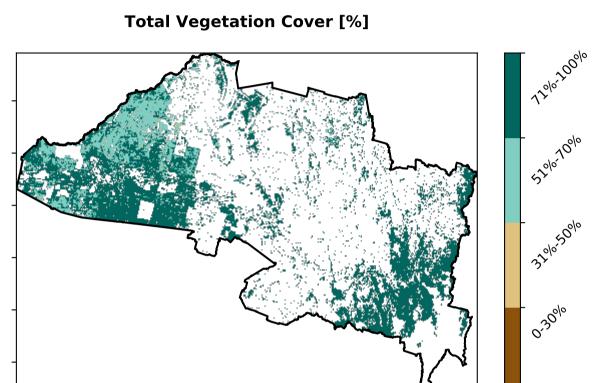


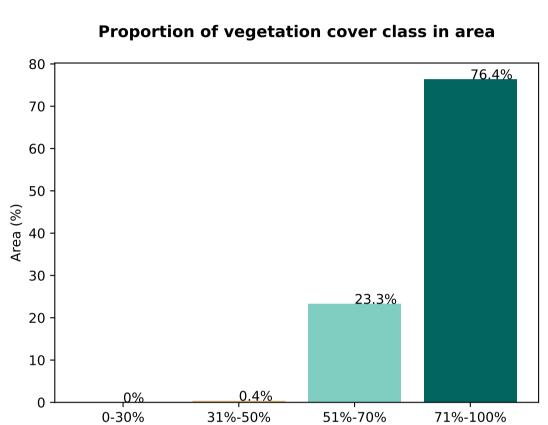
Grazing

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

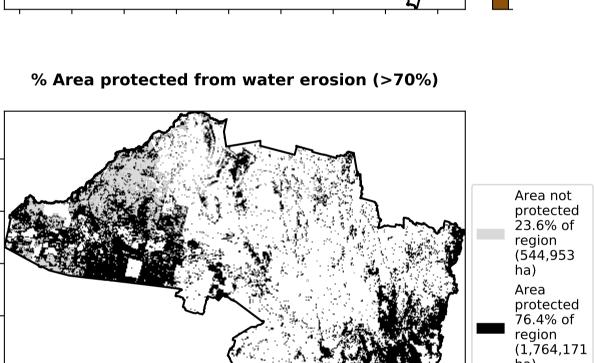
80 - 89.4% 60 - 20 - 6.1% 1 2 3 Land use class

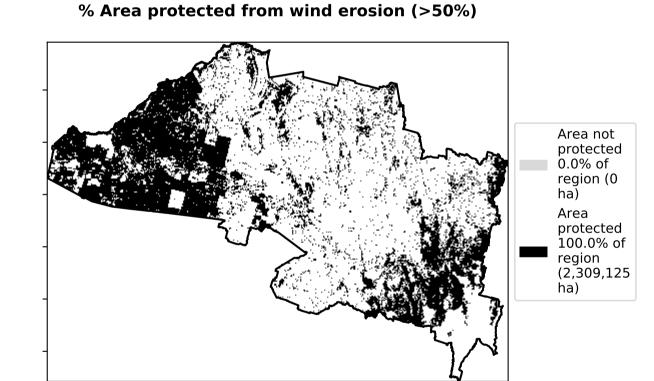
Proportion of each land class in area

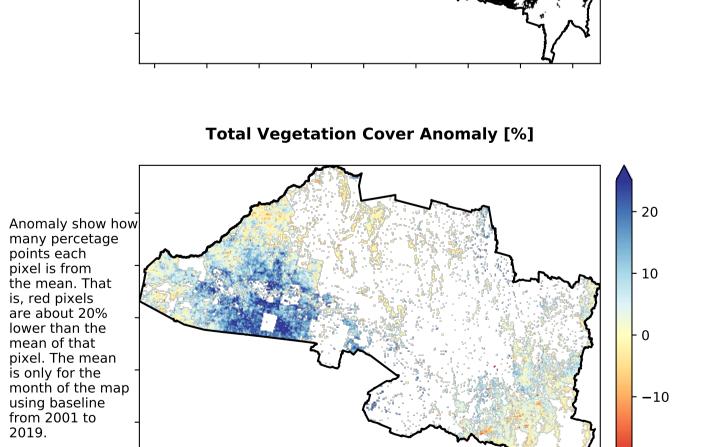


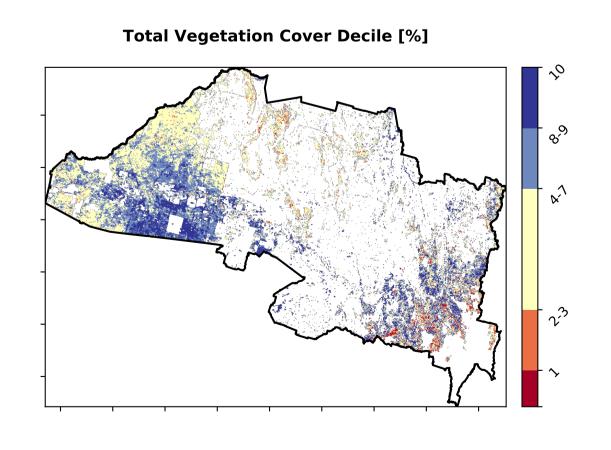


Total Vegetation Cover class









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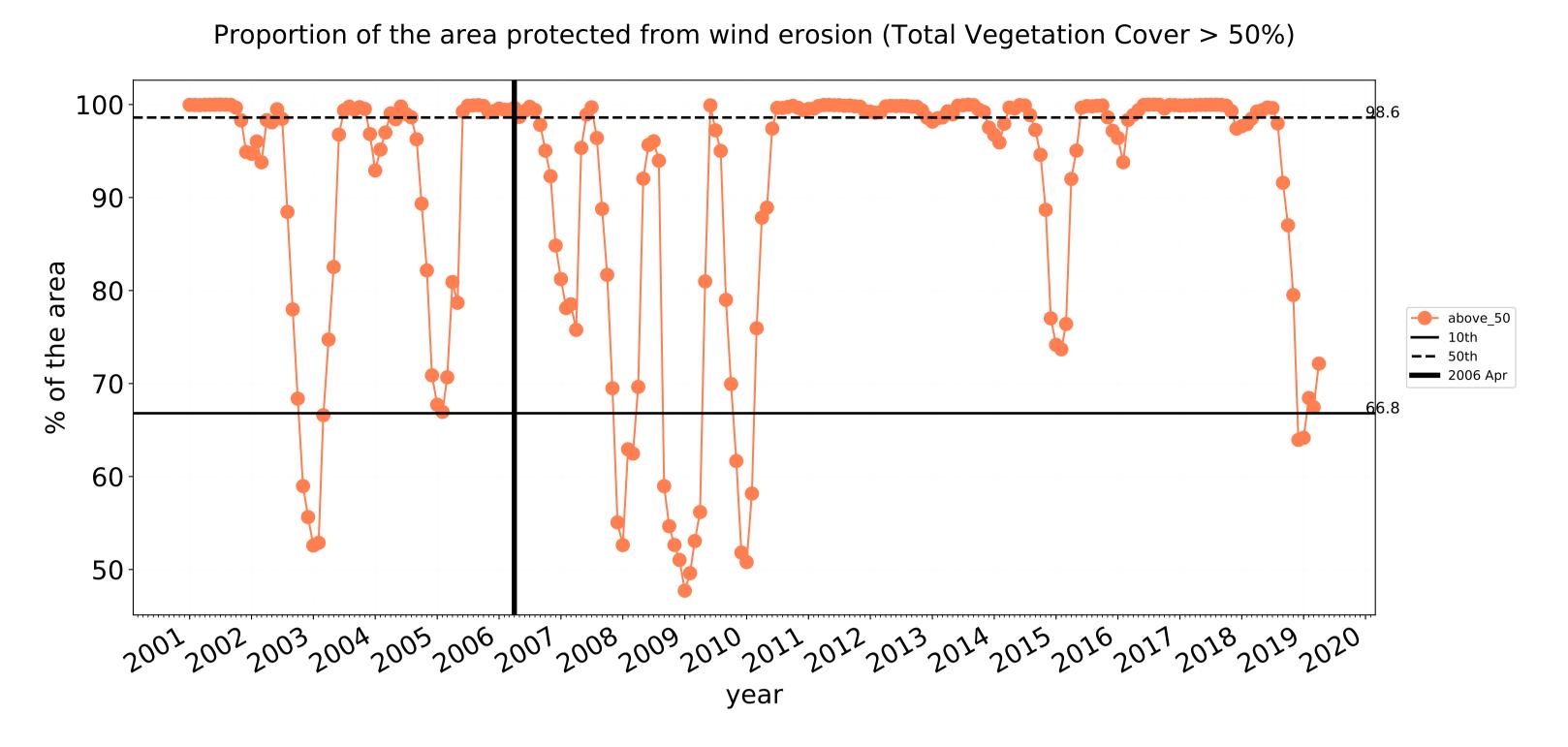


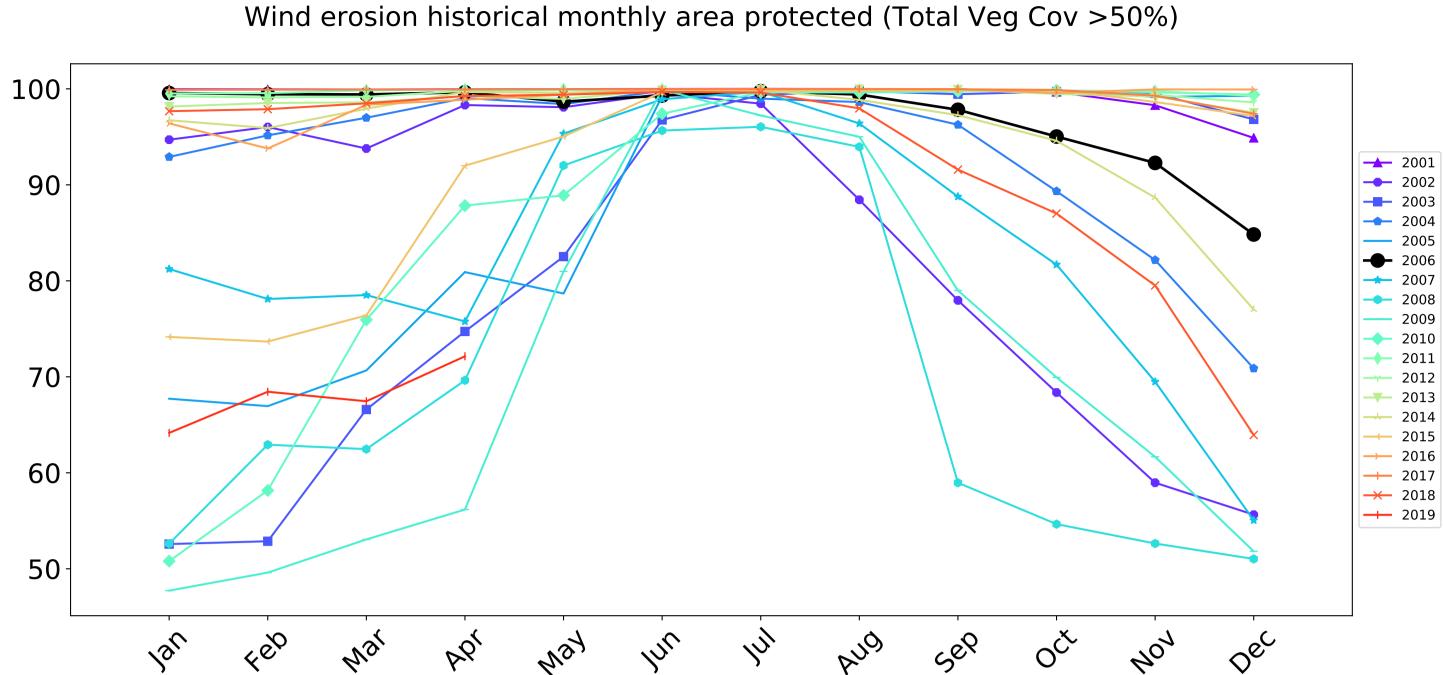


ha)

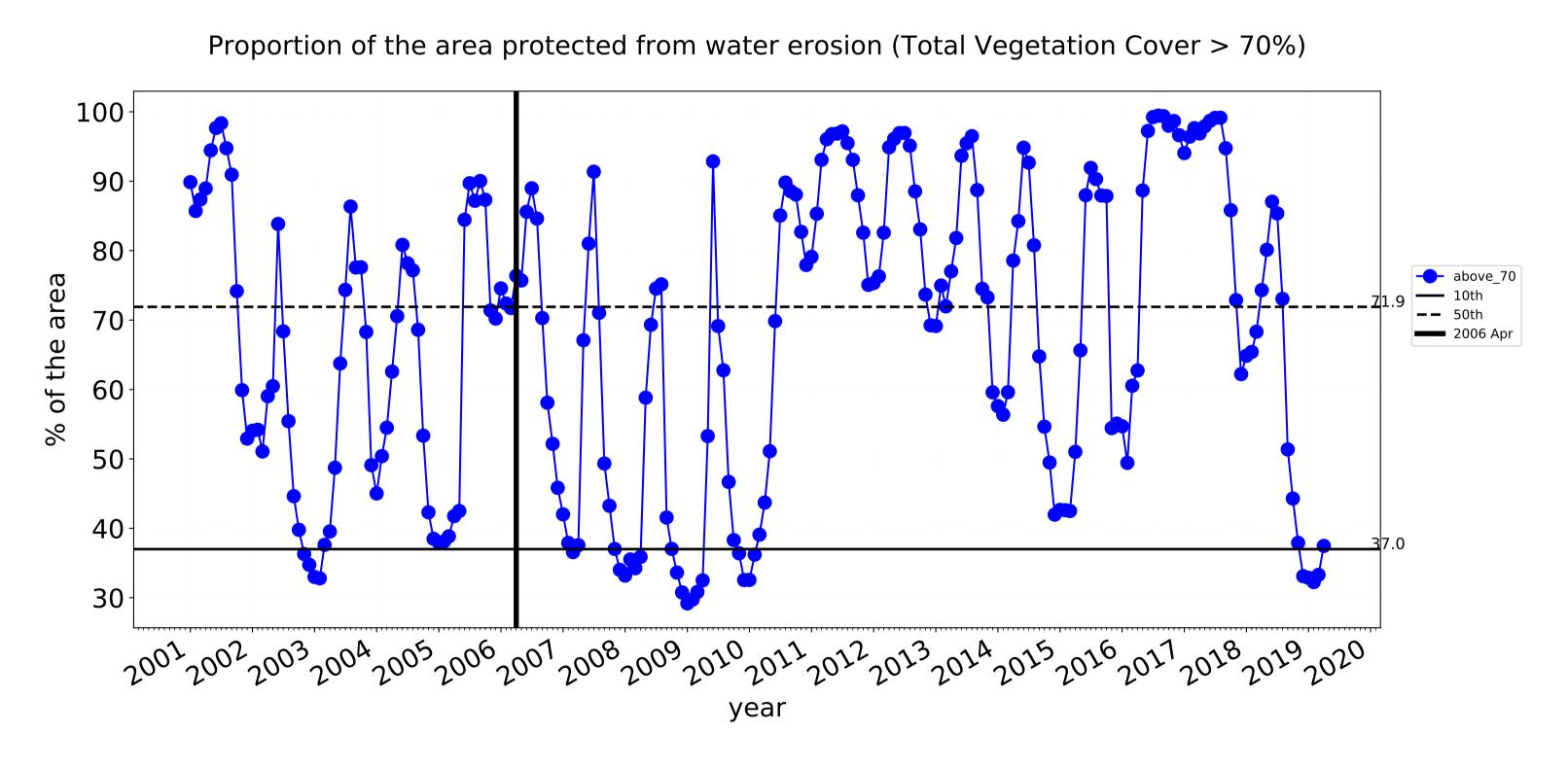
-20

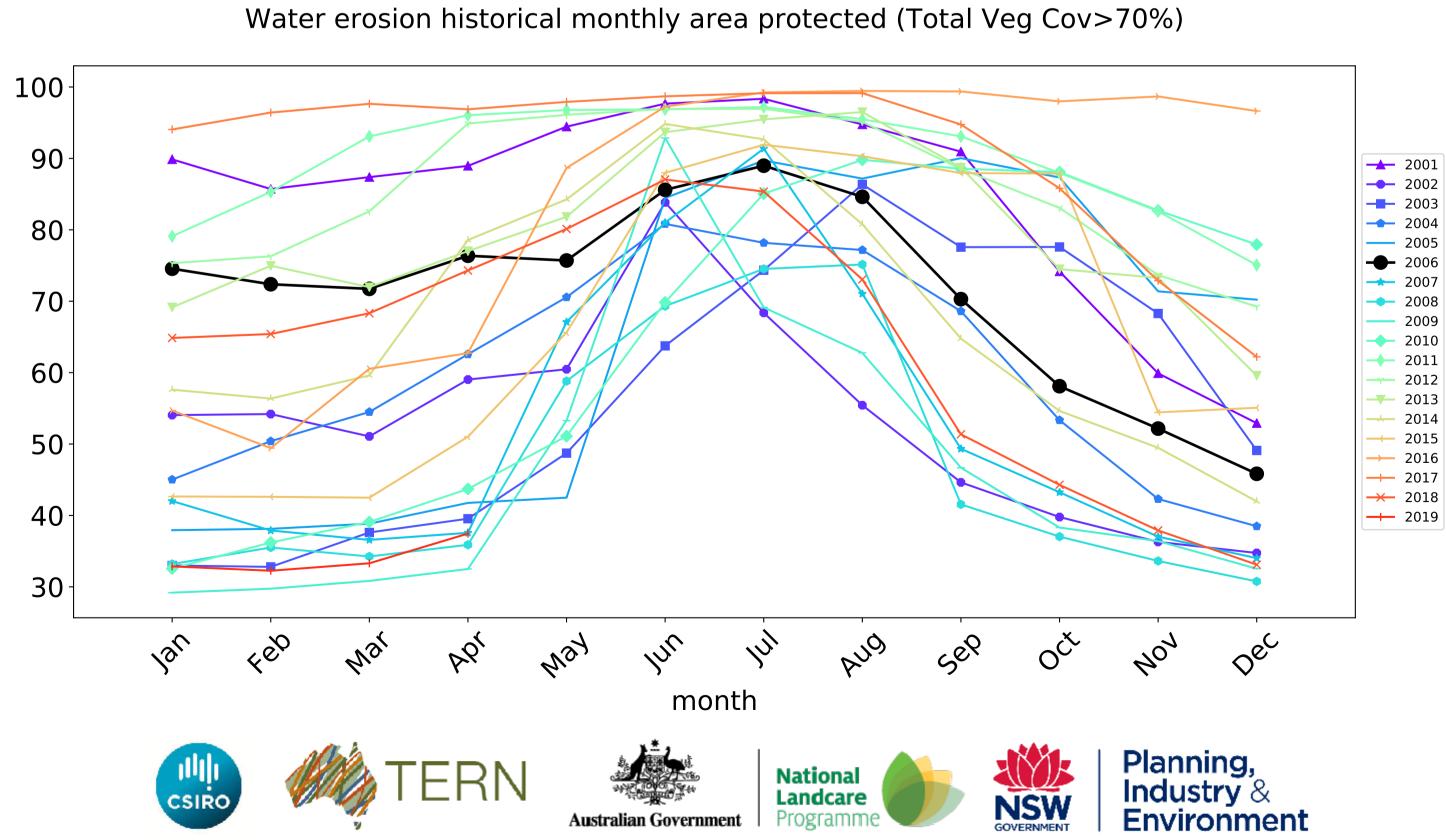
Grazing timeseries





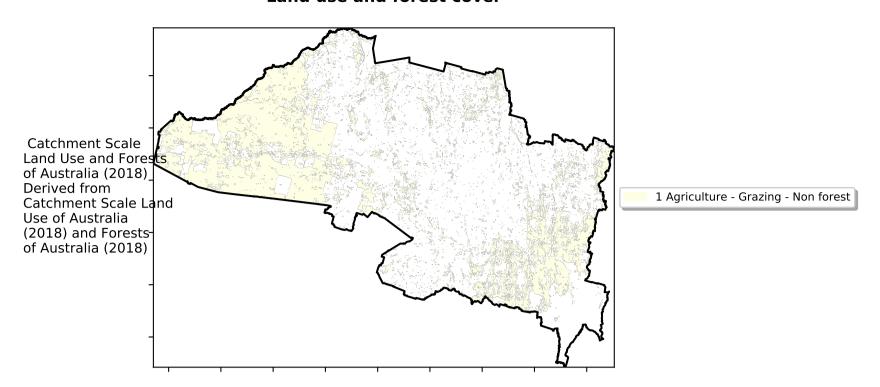
month



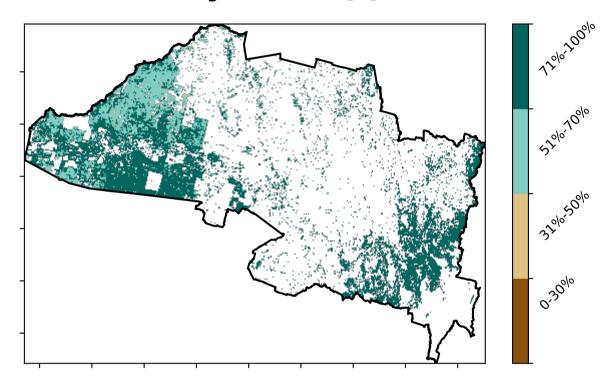


Grazing non forest

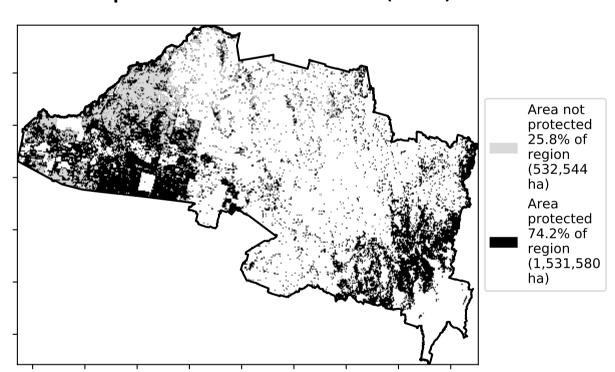
Land use and forest cover



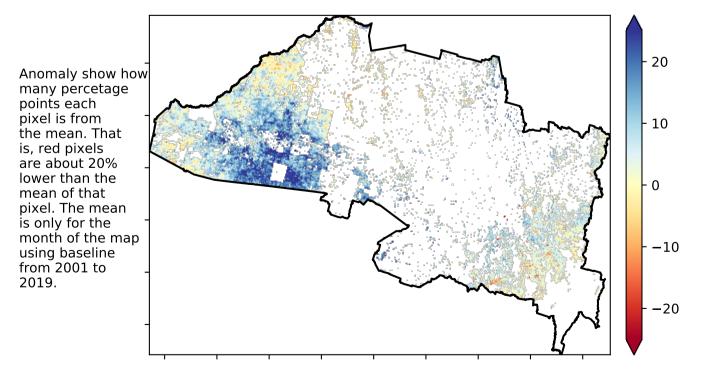
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

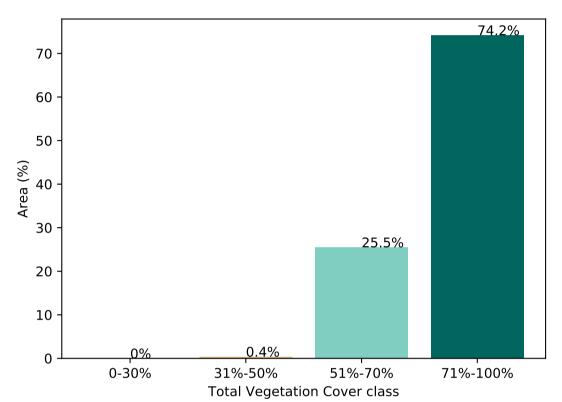


Total Vegetation Cover Anomaly [%]

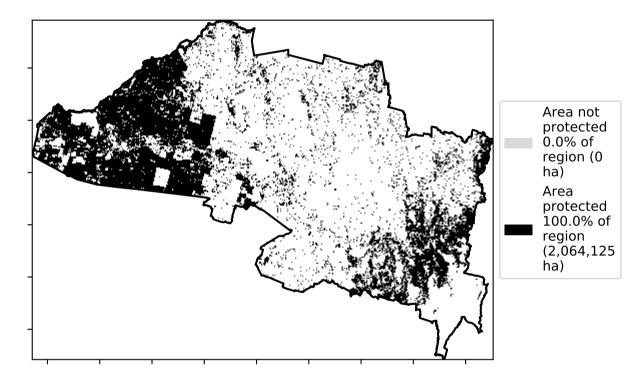


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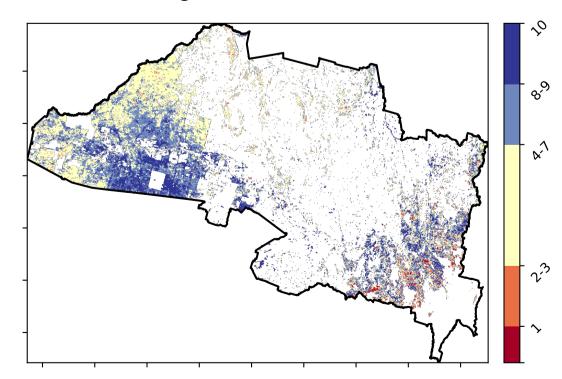
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







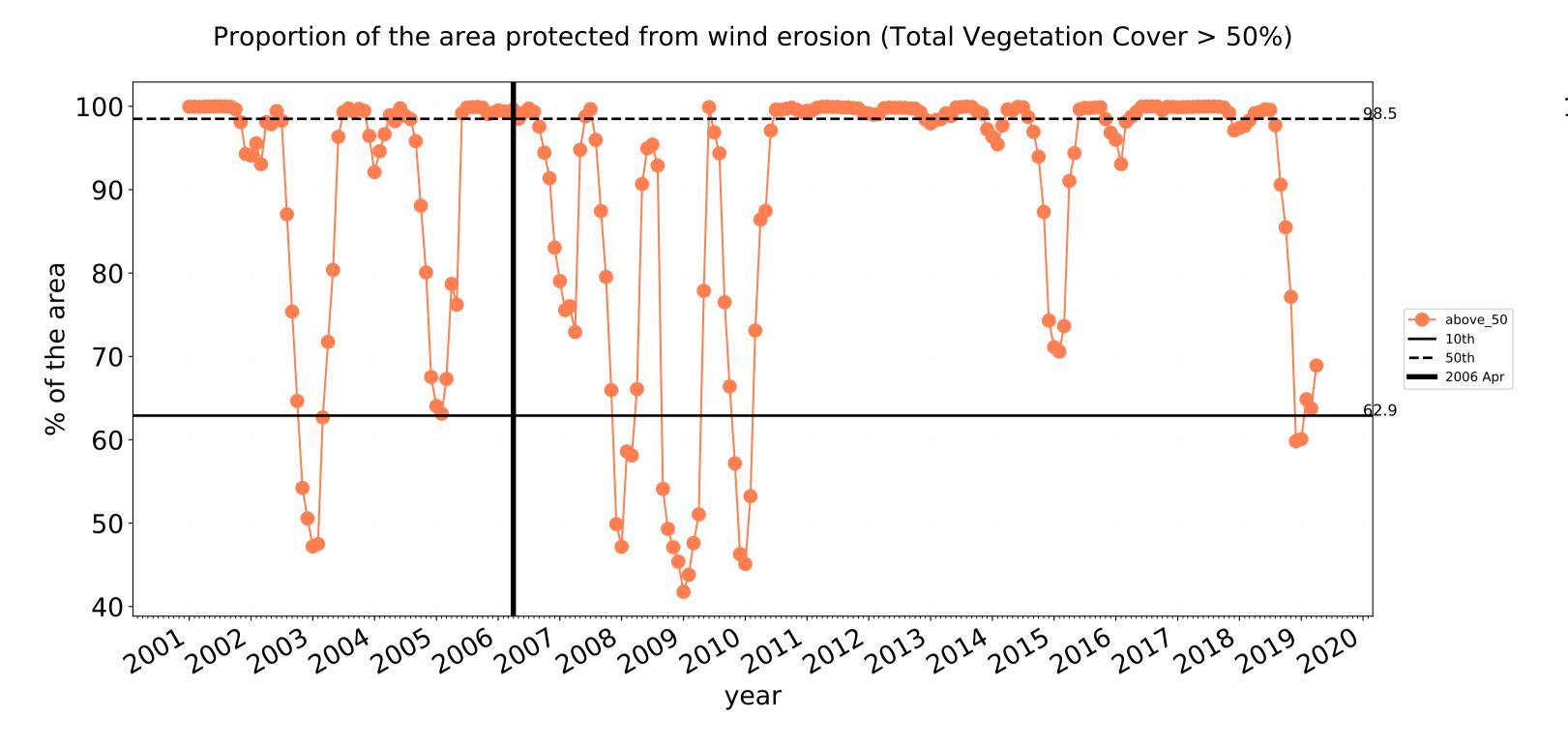


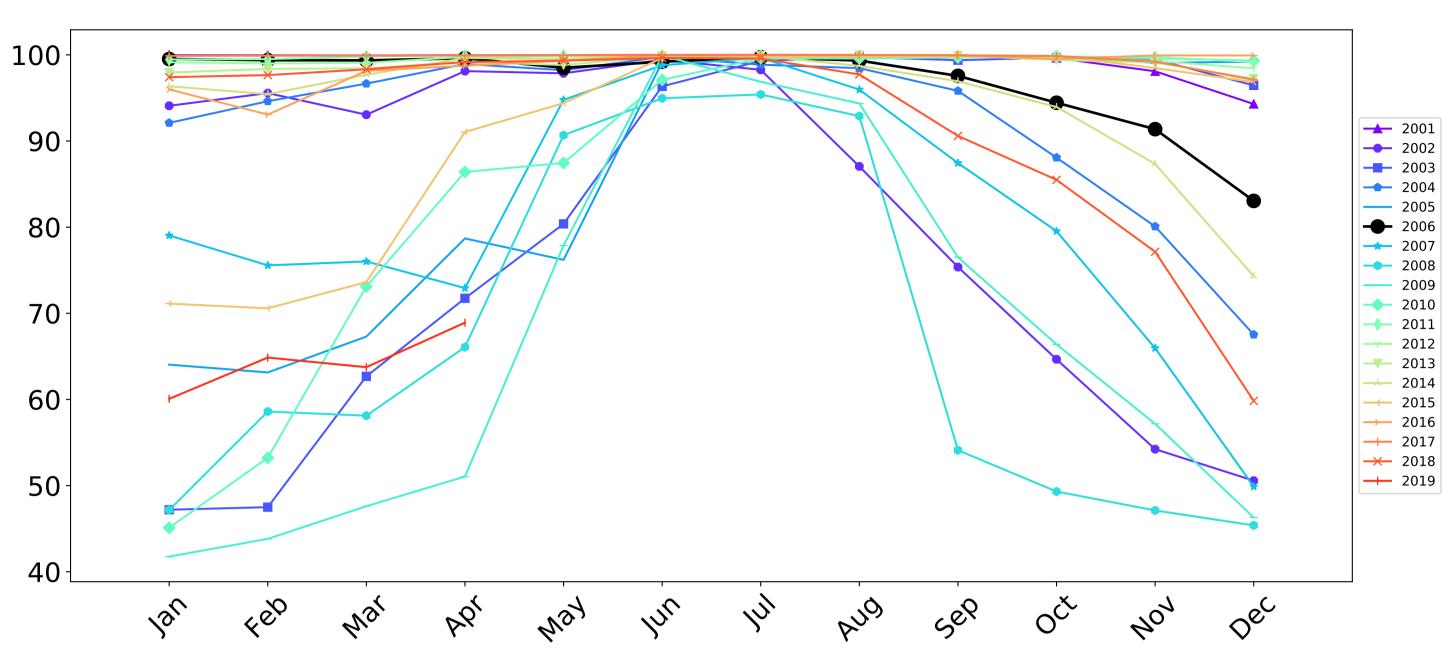






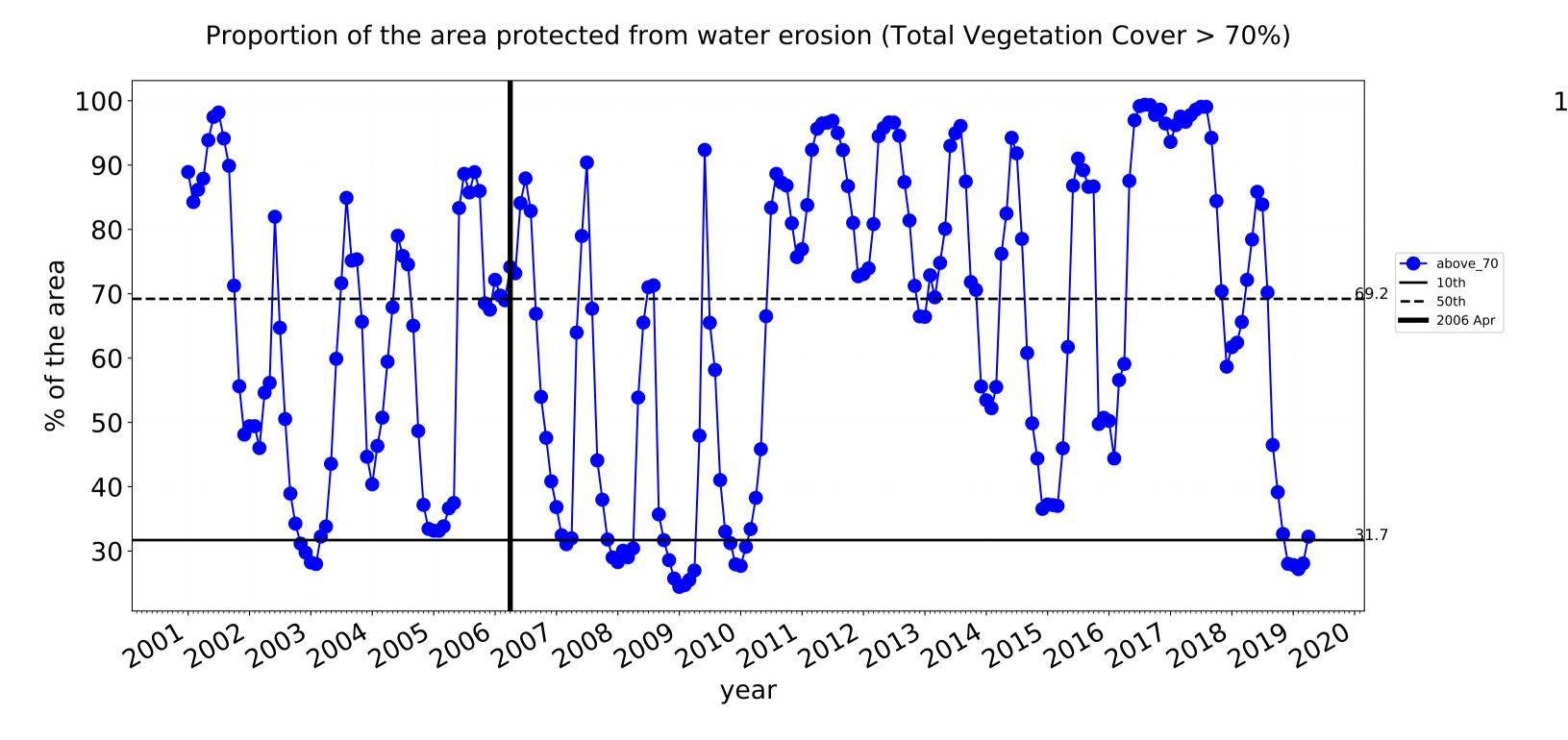
Grazing non forest timeseries

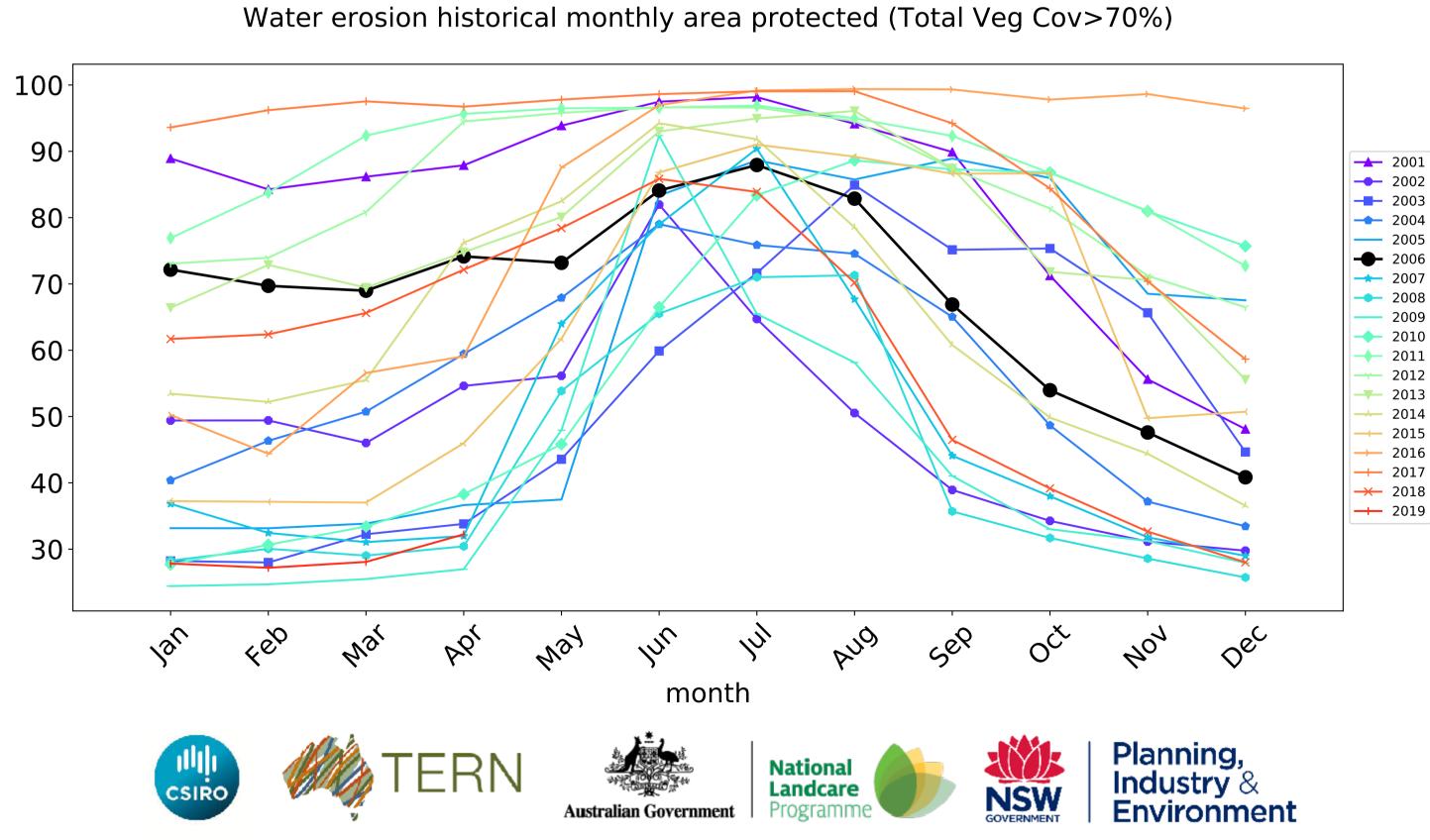




month

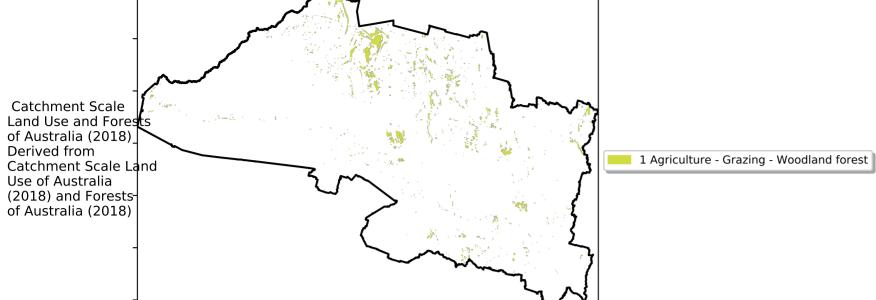
Wind erosion historical monthly area protected (Total Veg Cov >50%)



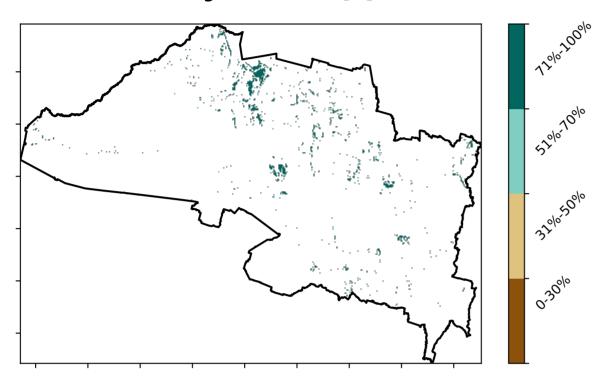


Grazing Woodland forest

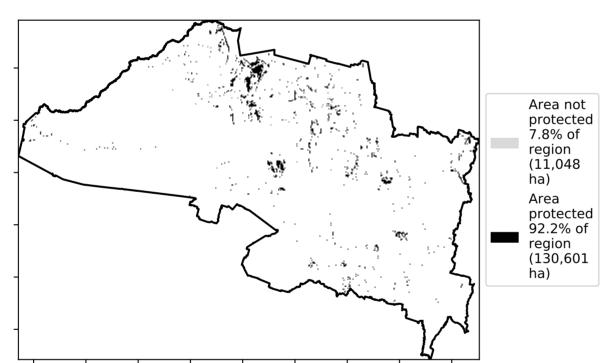
Land use and forest cover



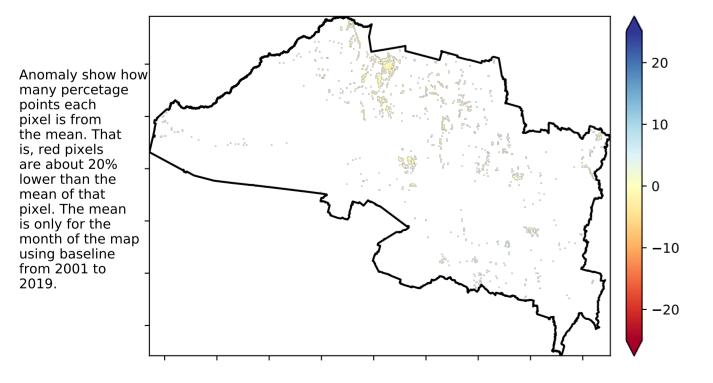
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

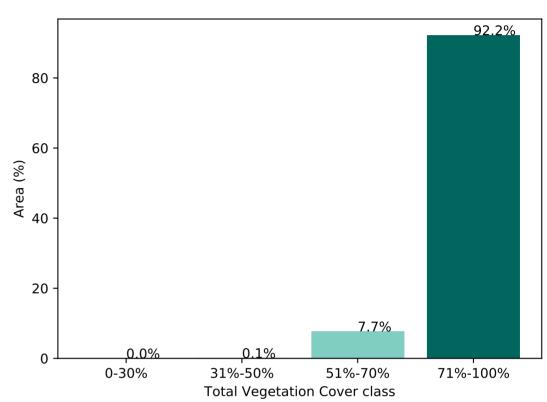


Total Vegetation Cover Anomaly [%]

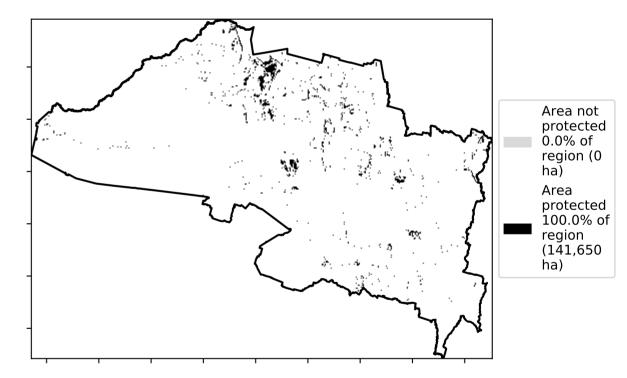


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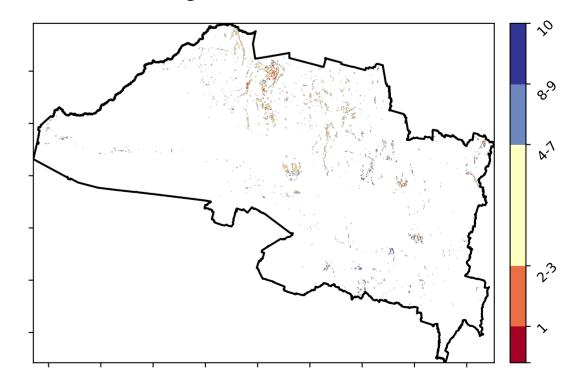
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







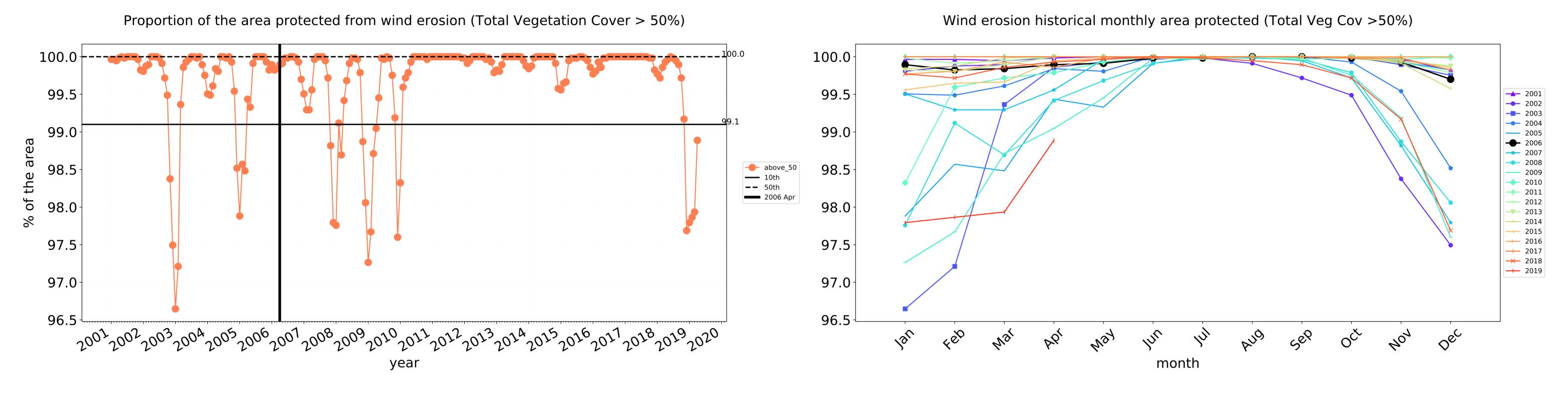


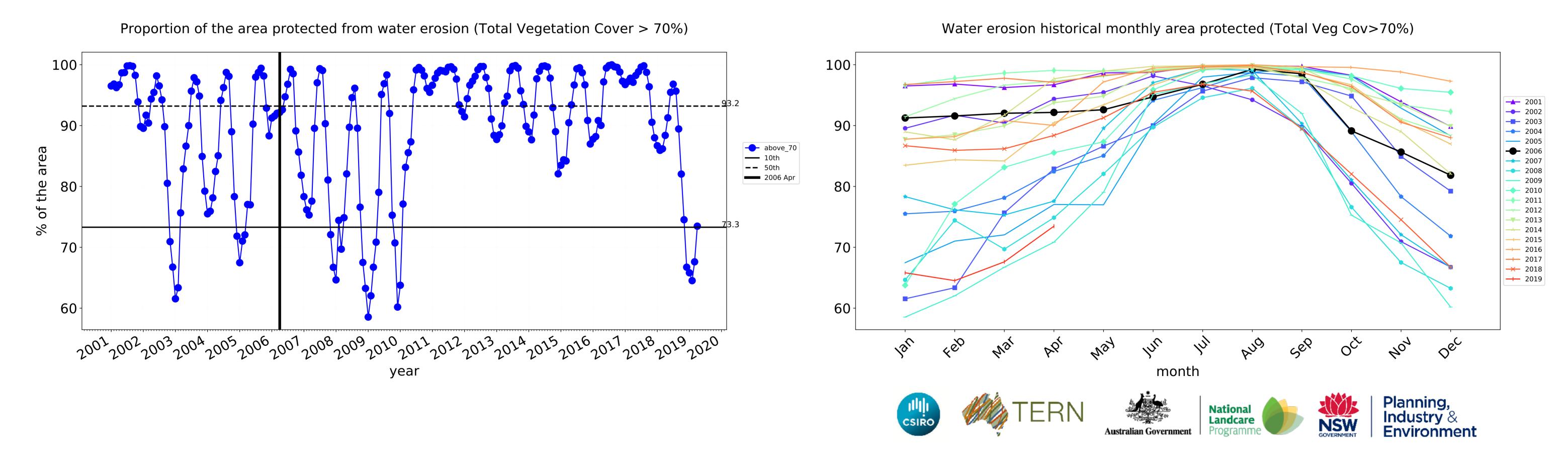




Planning, Industry & Environment

Grazing Woodland forest timeseries

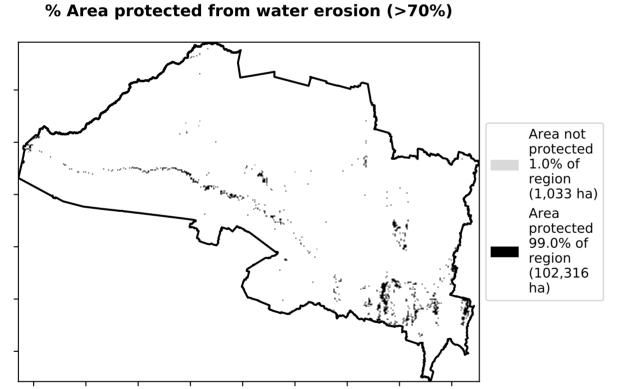


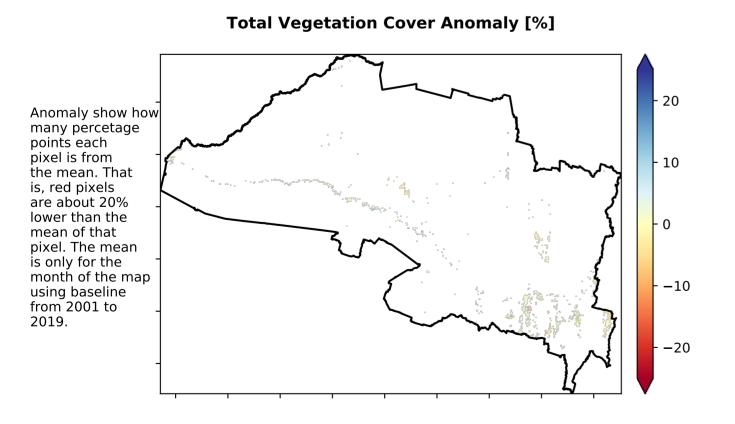


Grazing - Forest (non woodland)

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests-of Australia (2018)

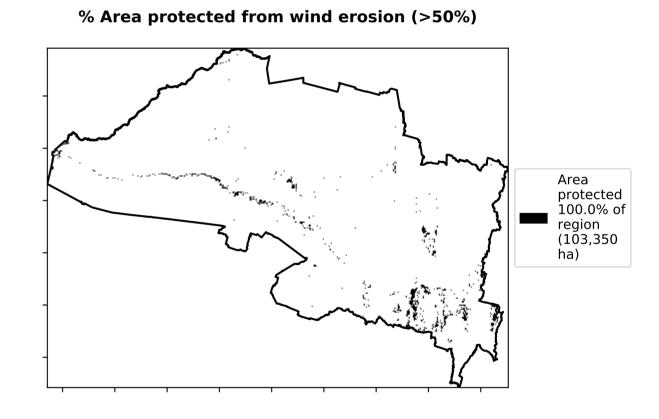
Total Vegetation Cover [%]

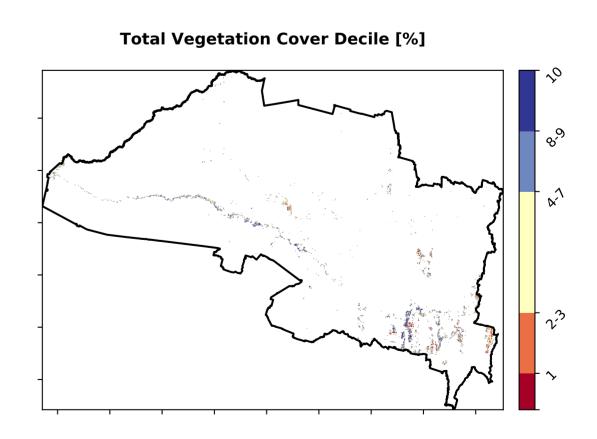




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 99.0% 100 80 20 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







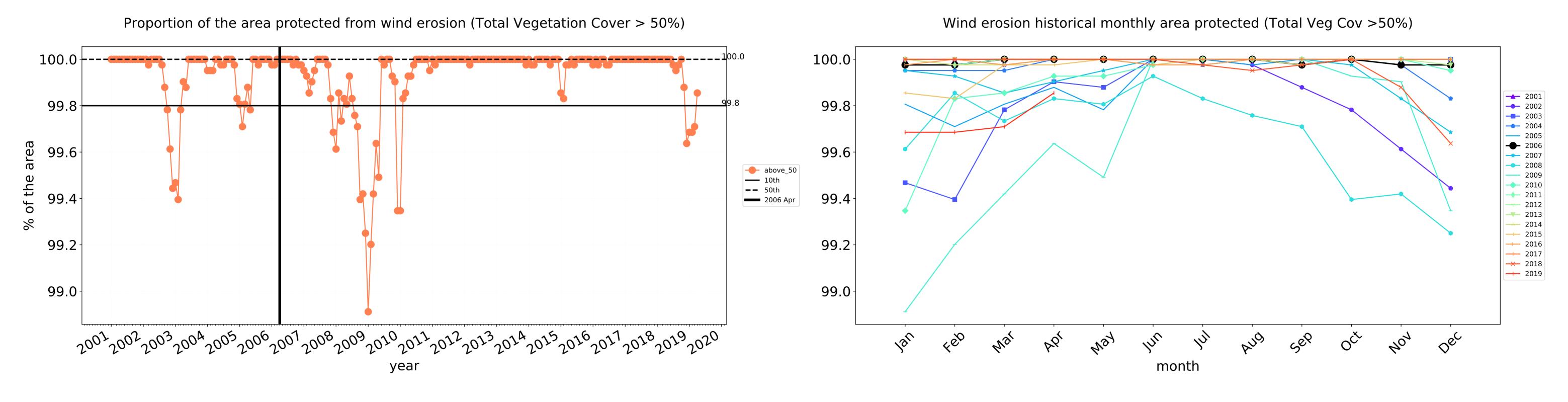


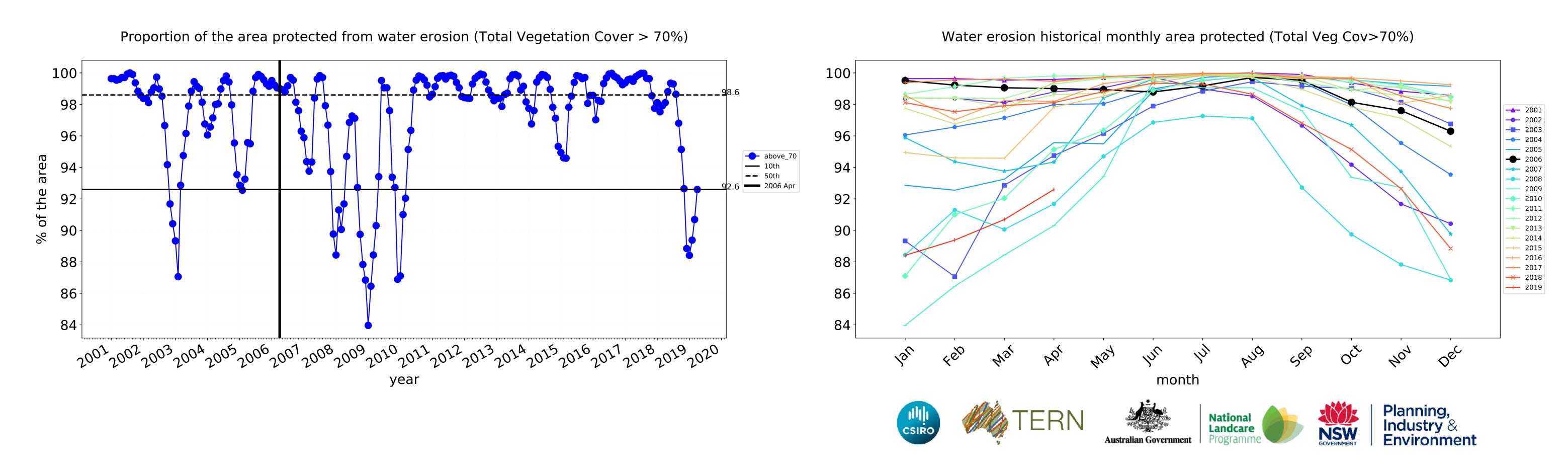






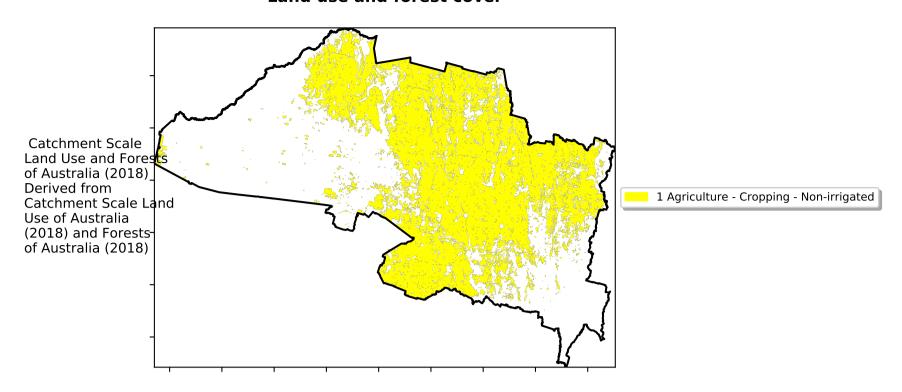




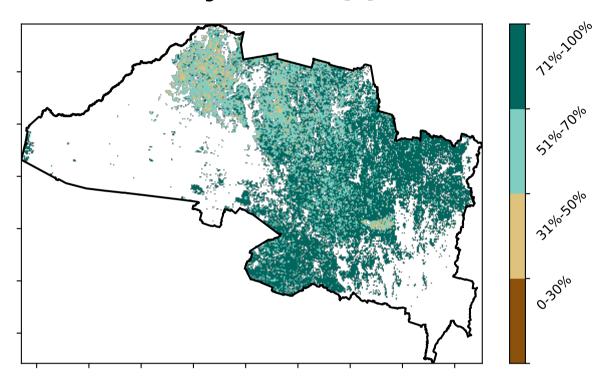


Cropping

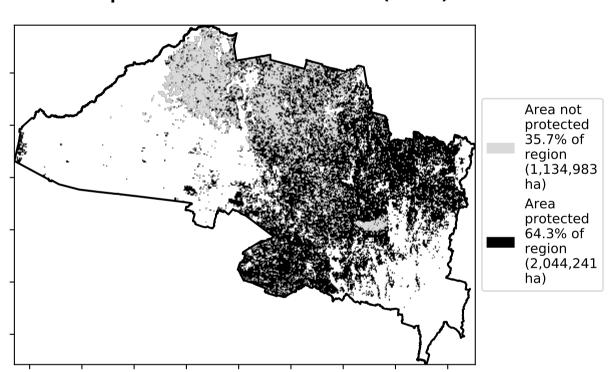
Land use and forest cover



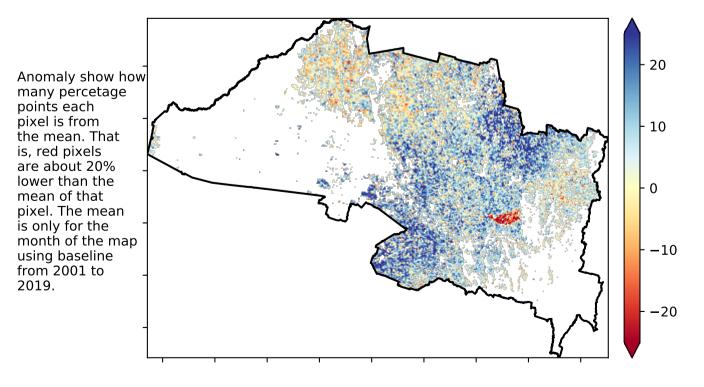
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

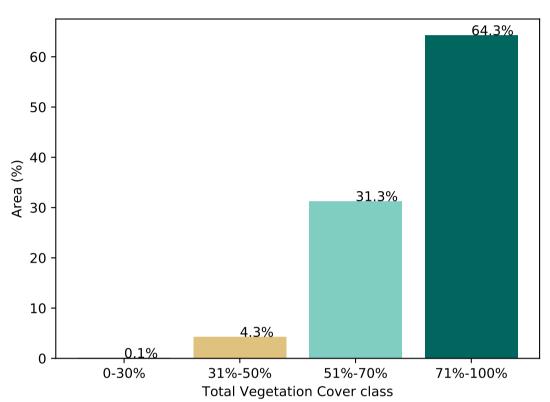


Total Vegetation Cover Anomaly [%]

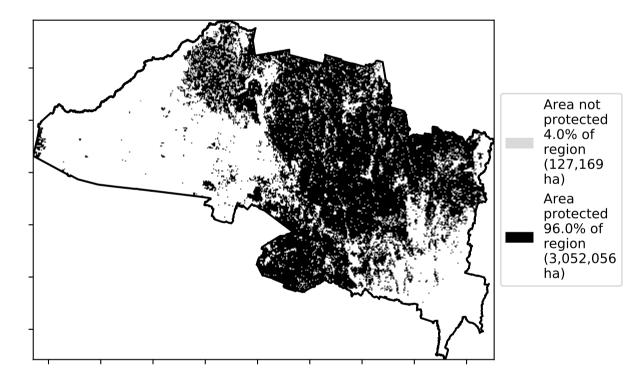


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

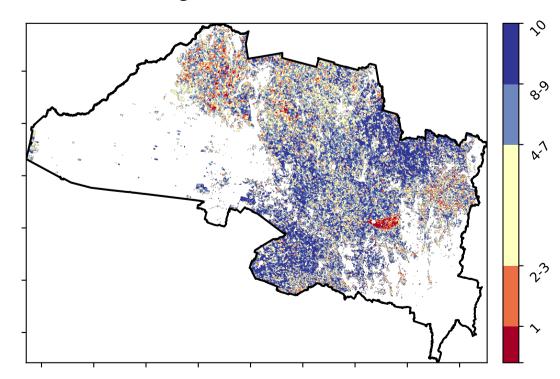
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







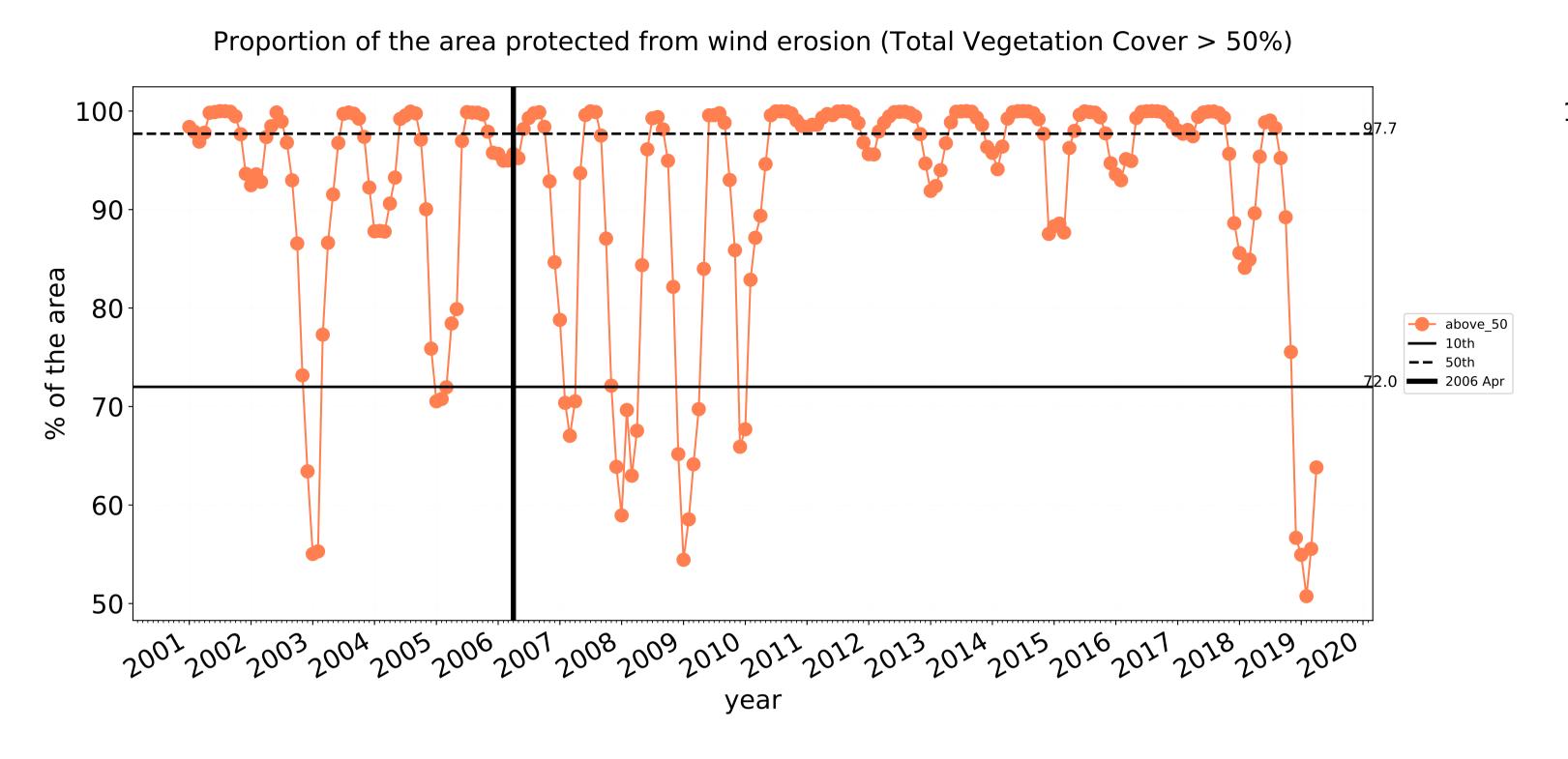


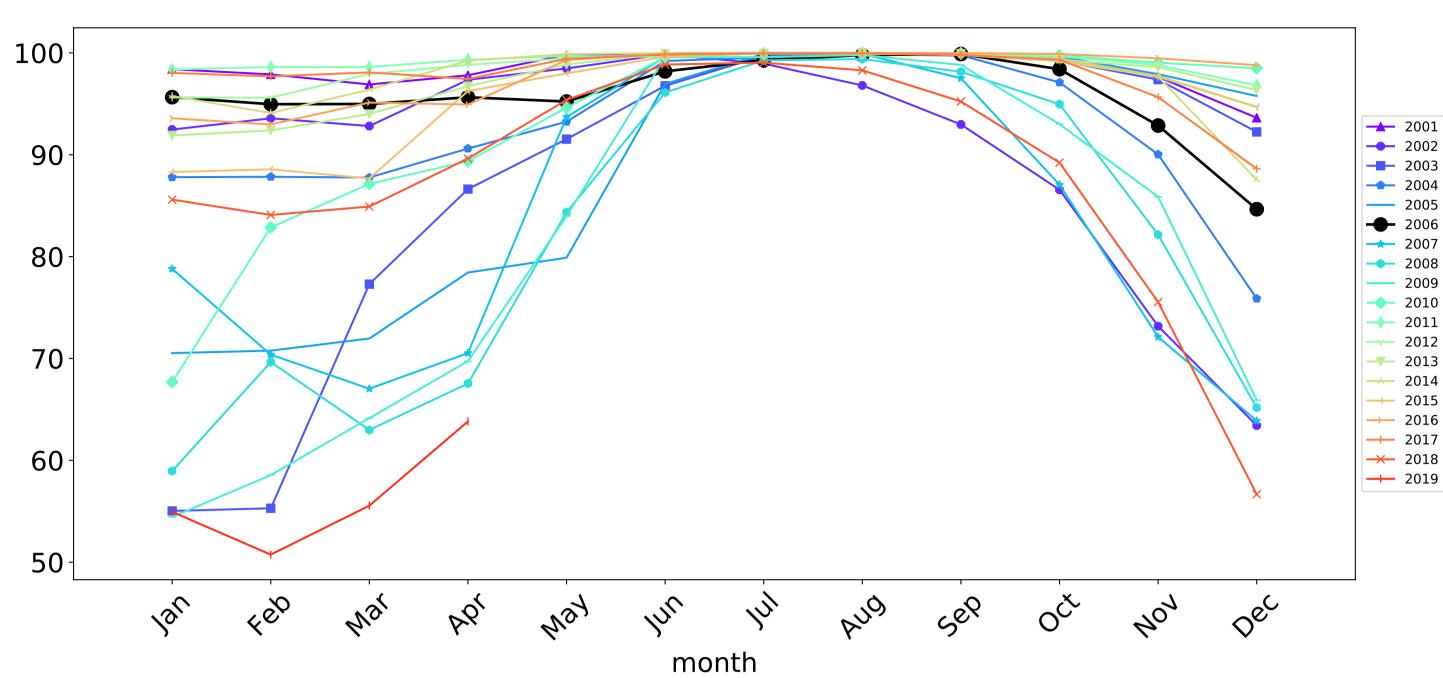




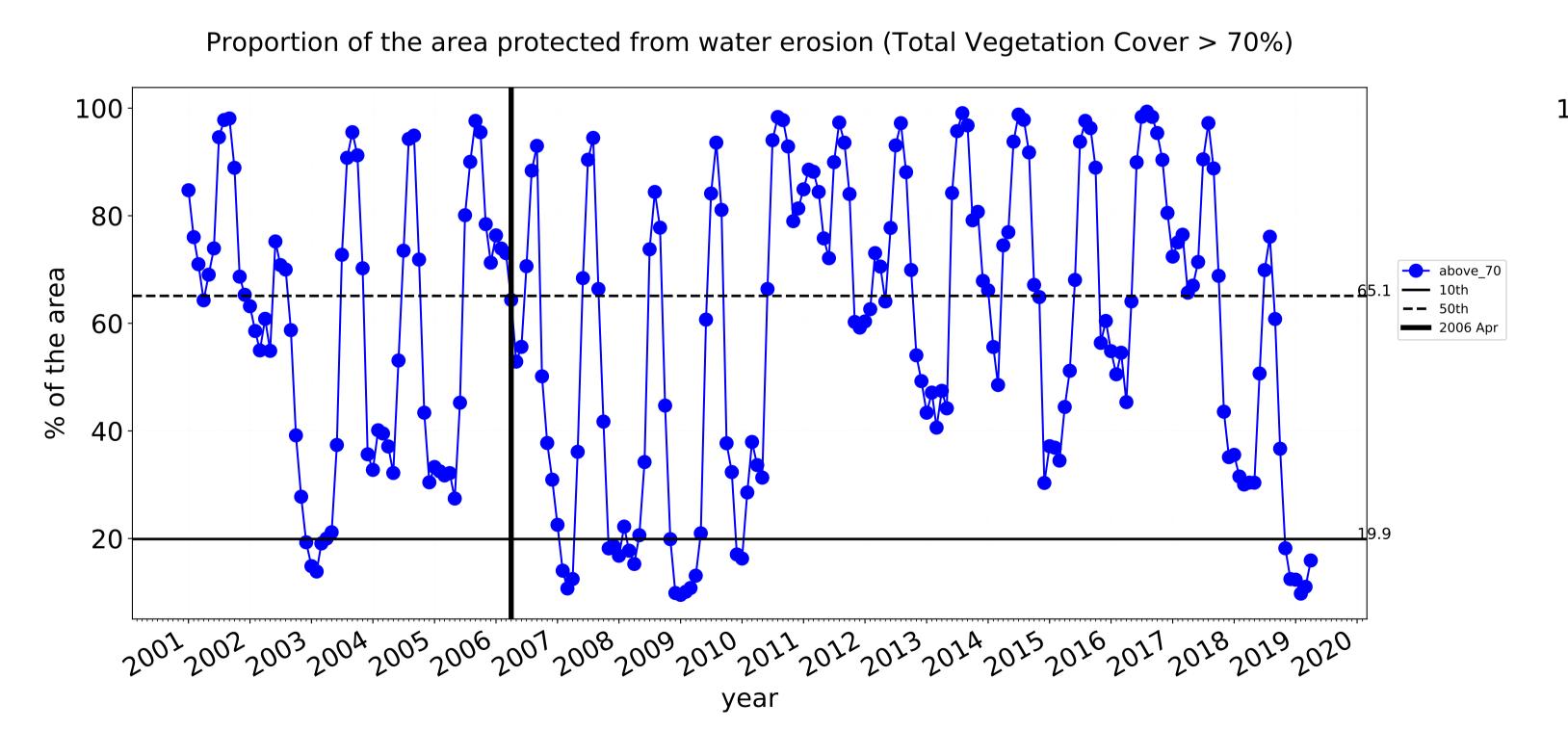


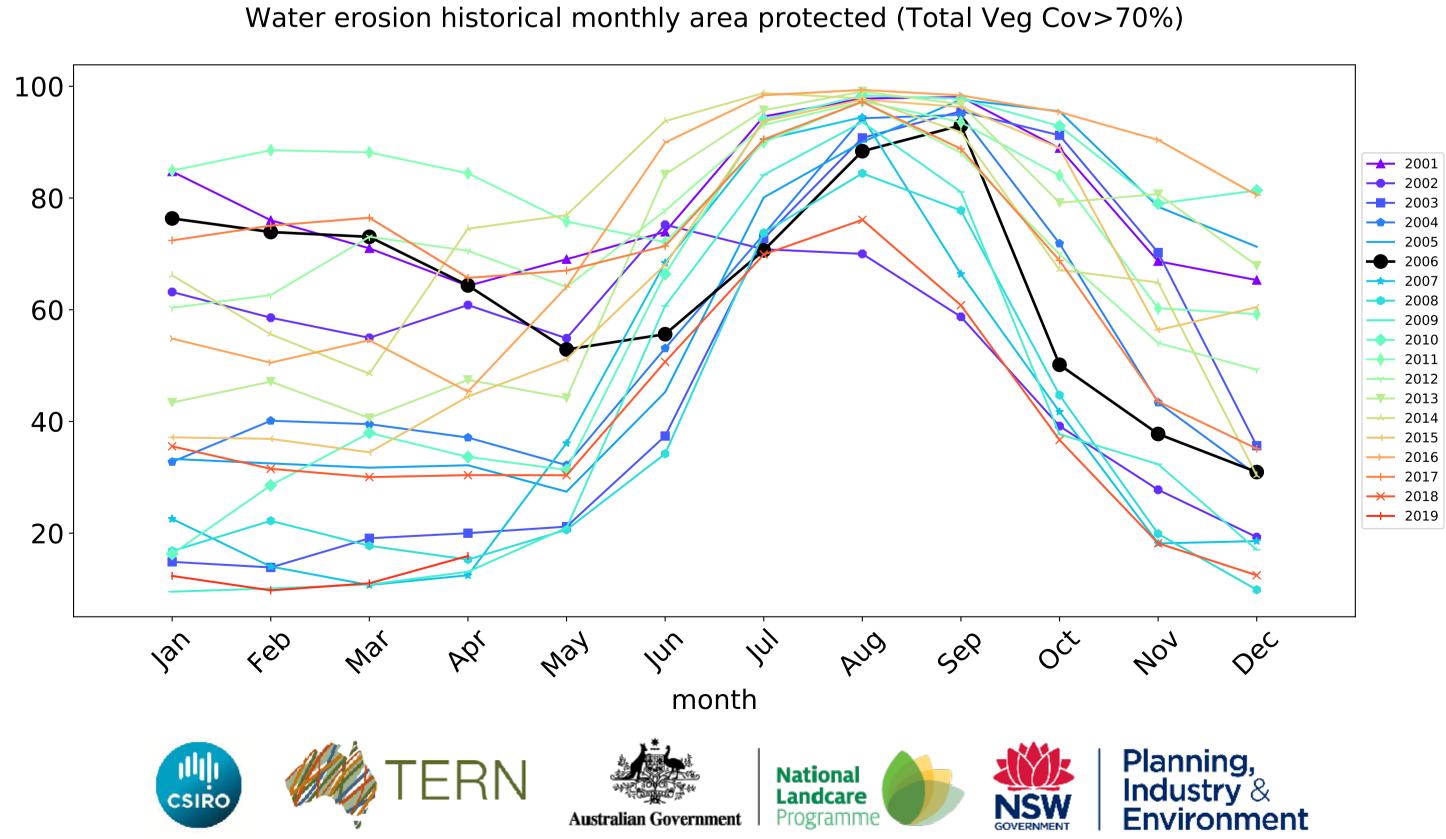
Cropping timeseries





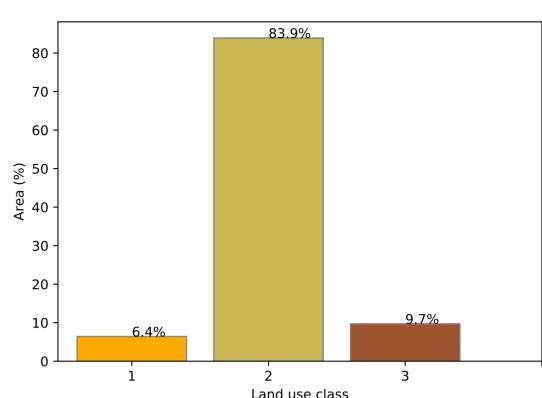
Wind erosion historical monthly area protected (Total Veg Cov >50%)

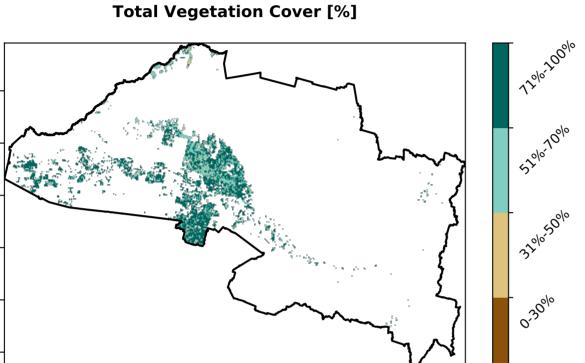


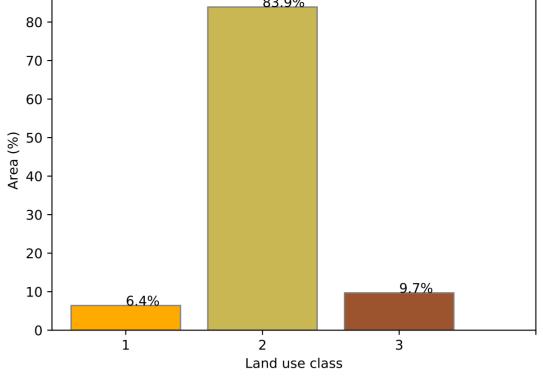


Irrigation

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated



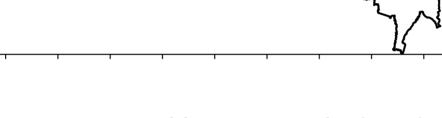


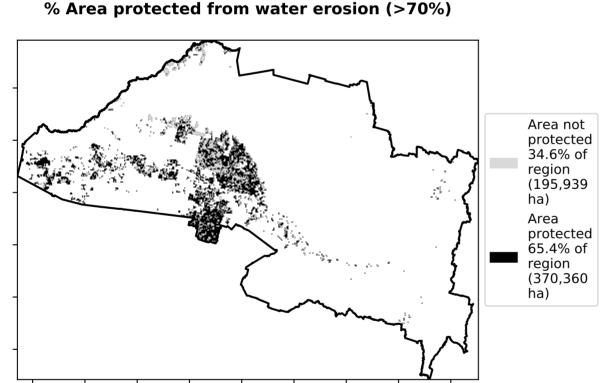


Proportion of vegetation cover class in area

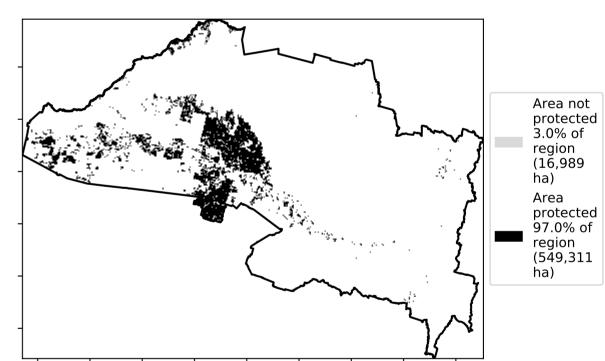
Proportion of each land class in area

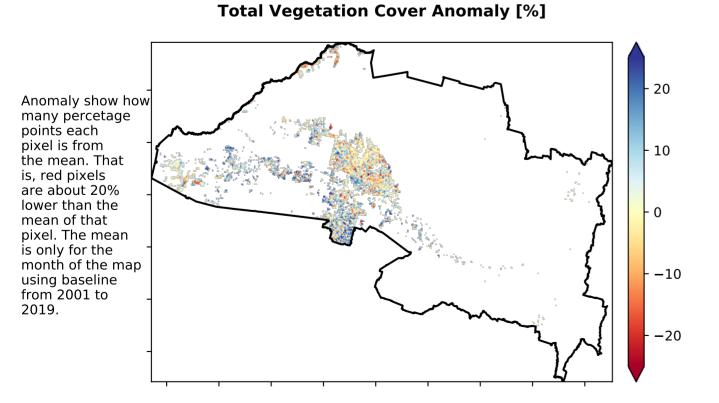
65.4% 60 50 Area (%) 31.8% 20 -10 -2.8% 31%-50% 51%-70% 71%-100% 0-30% **Total Vegetation Cover class**

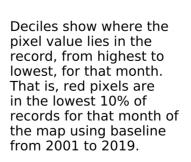


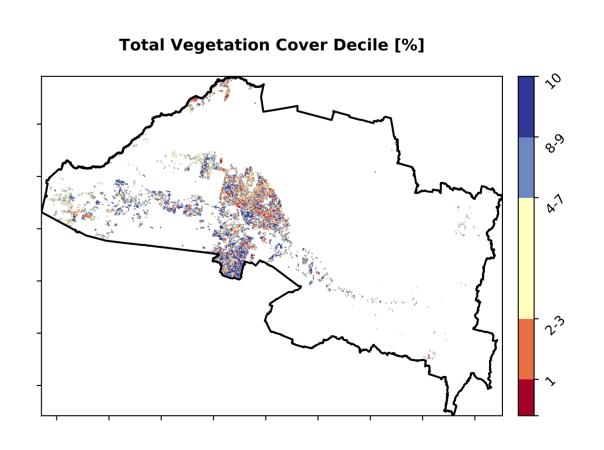


% Area protected from wind erosion (>50%)











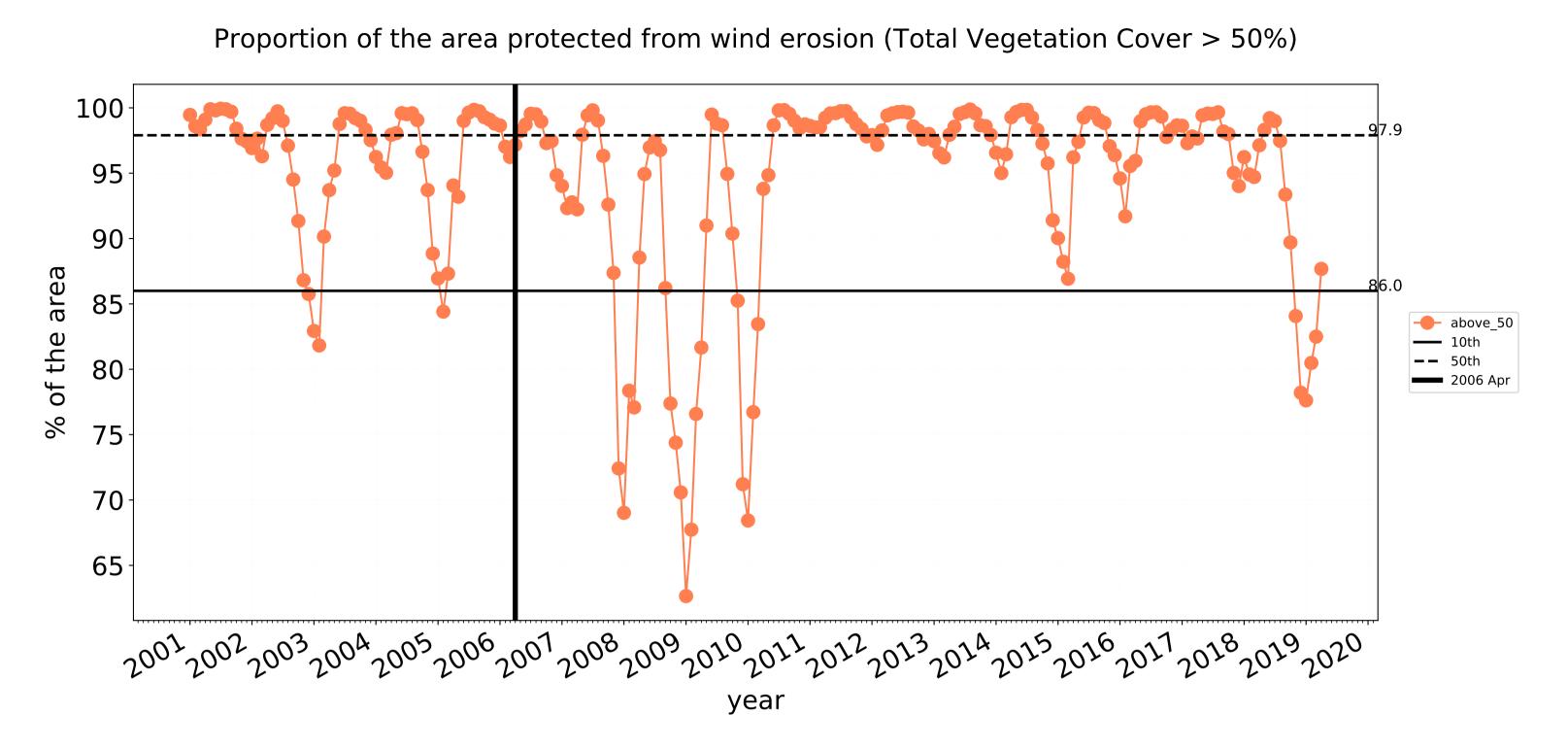


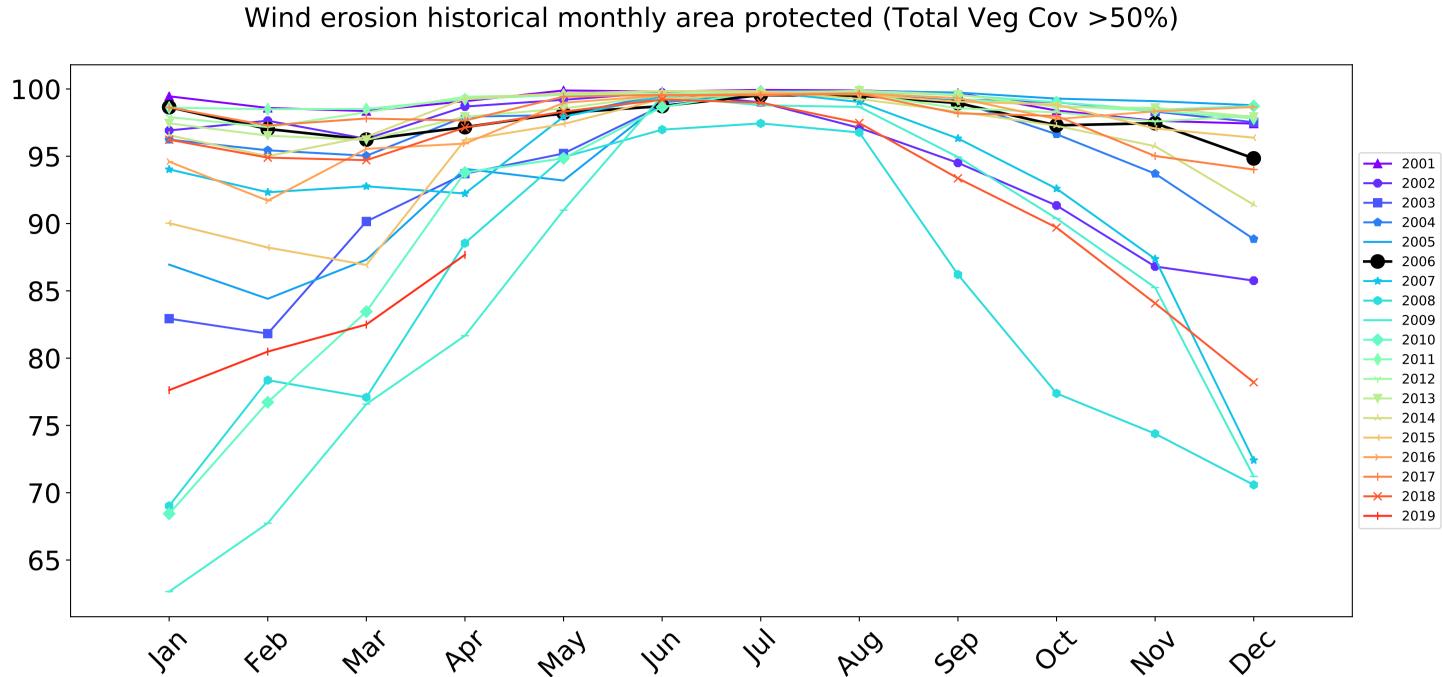




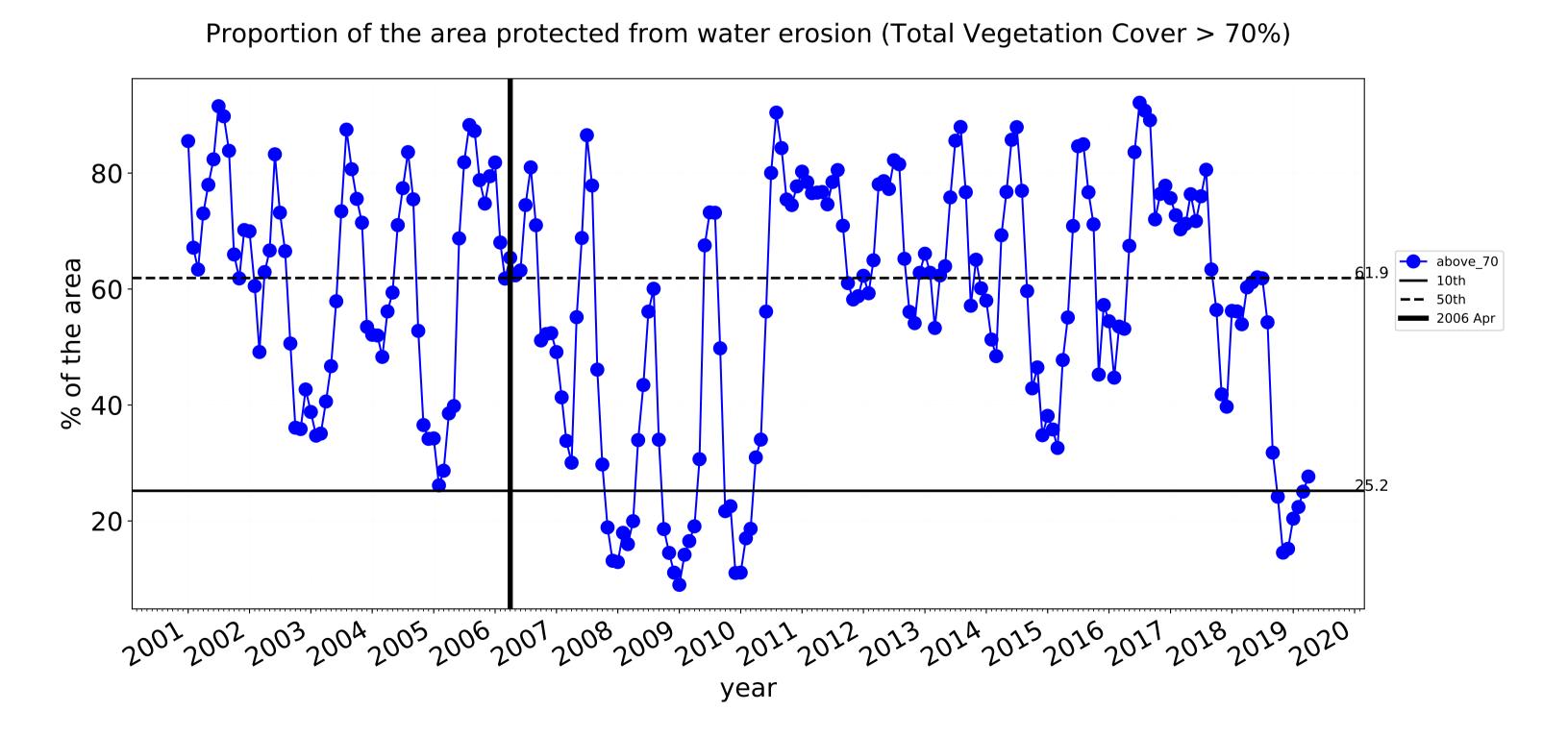


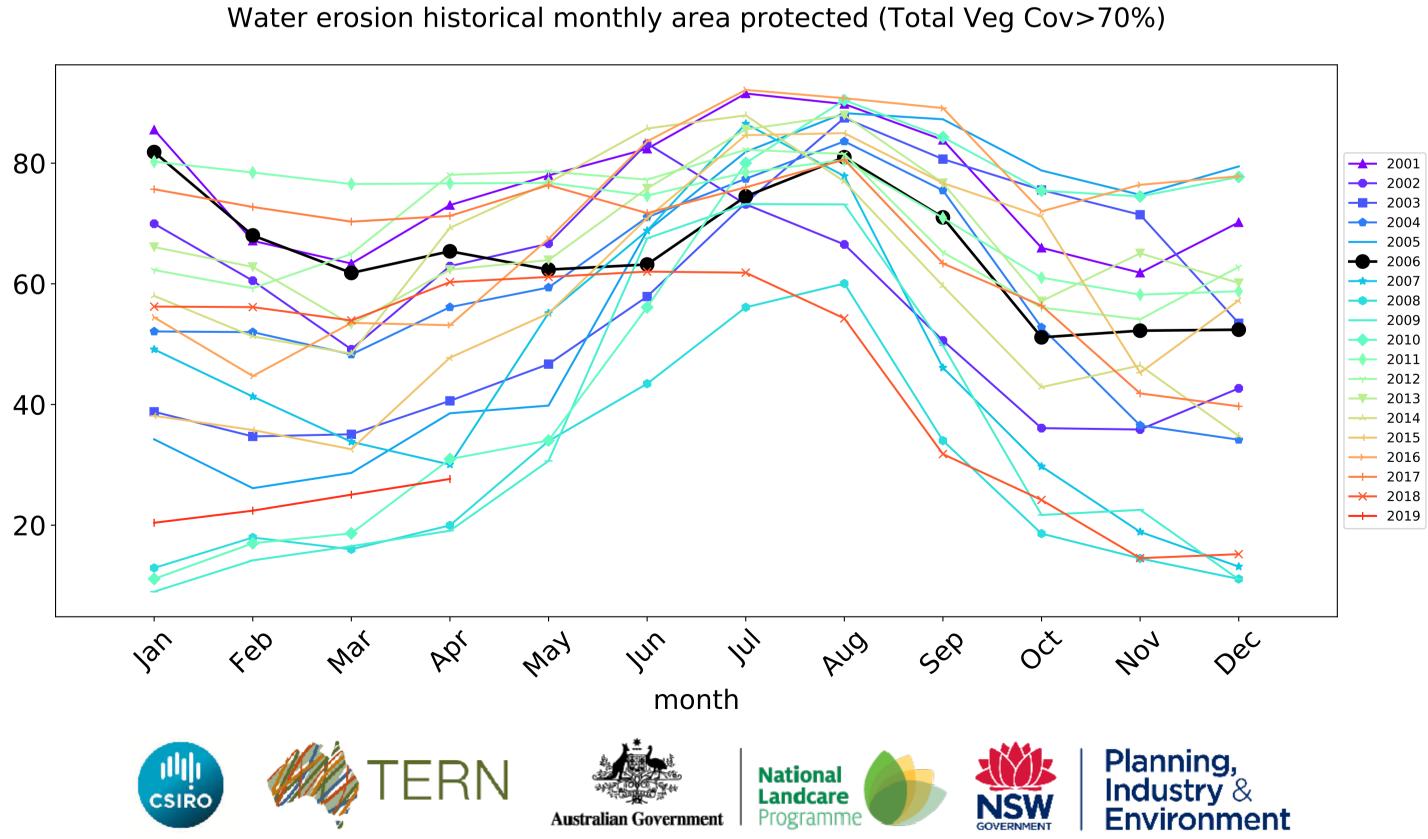






month



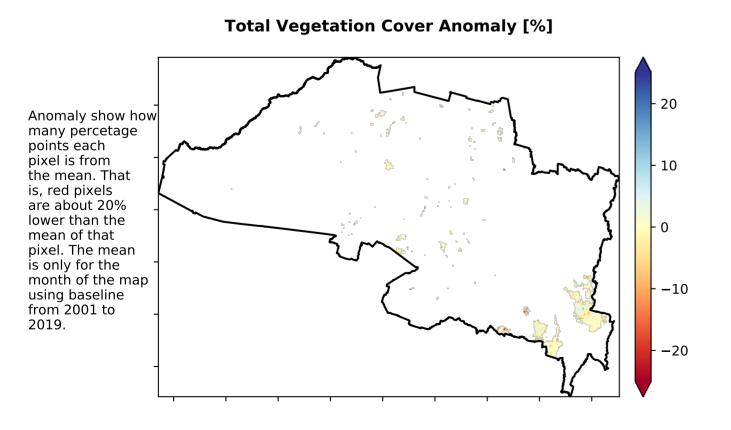


Production native forests and plantation forests

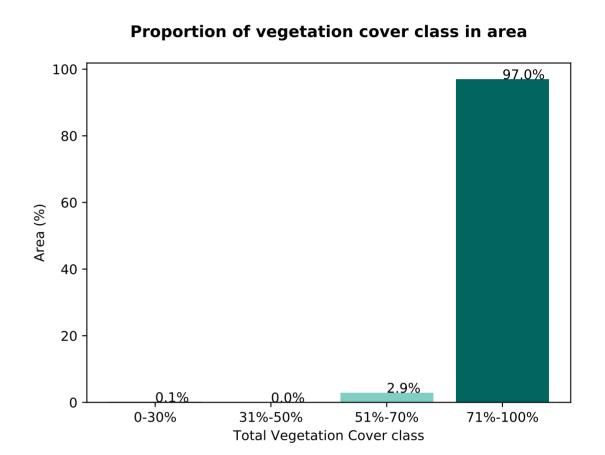
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018)

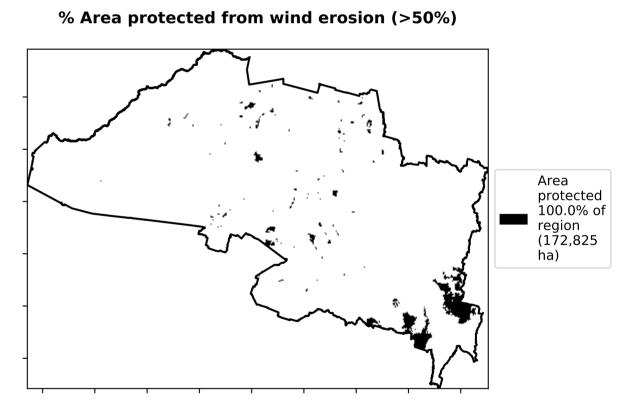
Total Vegetation Cover [%] Teleradolo Seleradolo Seleradolo Seleradolo Seleradolo Seleradolo Seleradolo

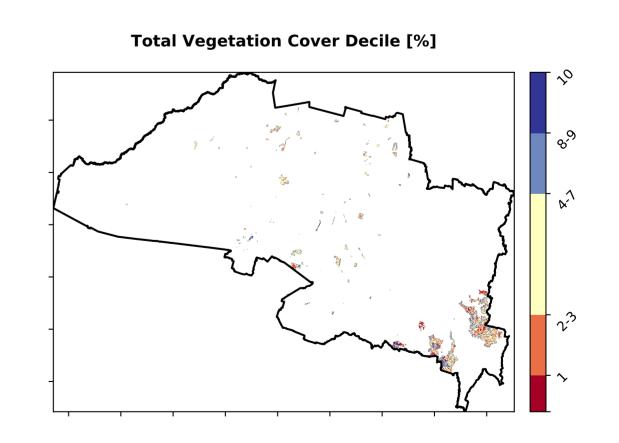
Area not protected 3.0% of region (5,184 ha) Area protected 97.0% of region (167,640 ha)



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.











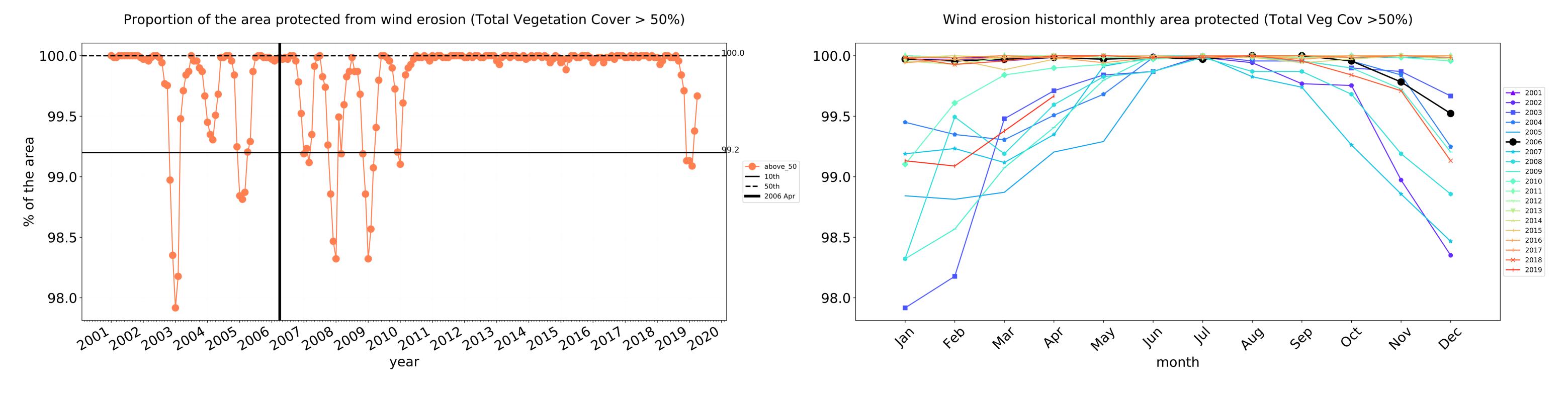


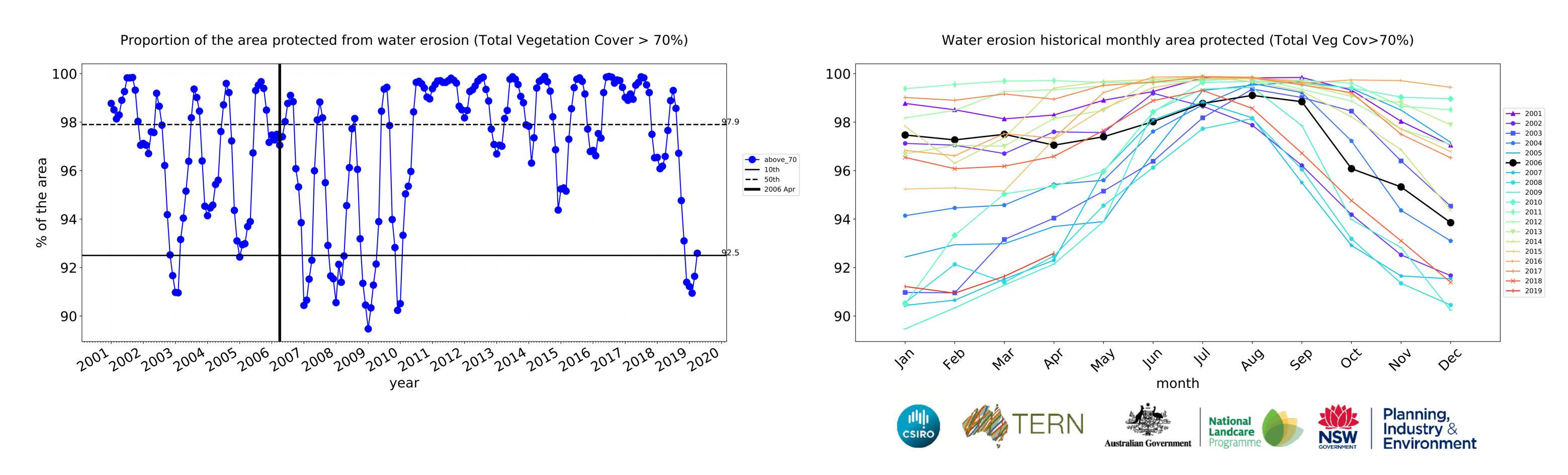






Production native forests and plantation forests timeseries





Riverina (6,693,600 ha and no data 14,735 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	6,693,600	100.0% 6,692,548	97.5% 6,527,914	71.0% 4,753,058	47.6% 3,187,663	22.8% 1,522,997	11.5% 772,805
Conservation and natural environments	322,875	100.0% 322,875	100.0% 322,750	93.6% 302,250	84.4% 272,550	63.2% 204,075	41.3% 133,450
Conservation and natural environments non forest	83,275	100.0% 83,275	99.8% 83,150	76.3% 63,525	48.9% 40,725	36.7% 30,525	26.4% 21,975
Conservation and natural environments Forest (non woodland)	195,100	100.0% 195,100	100.0% 195,100	99.9% 194,950	98.5% 192,125	80.9% 157,875	54.8% 106,875
Agriculture	6,056,475	100.0% 6,055,575	97.3% 5,893,600	69.0% 4,180,050	44.5% 2,694,525	19.6% 1,185,025	9.1% 551,025
Grazing	2,309,125	100.0% 2,309,100	99.6% 2,300,875	76.4% 1,763,500	52.7% 1,216,500	25.7% 592,850	11.5% 264,425
Grazing non forest	2,064,125	100.0% 2,064,100	99.6% 2,056,025	74.2% 1,530,625	49.9% 1,029,650	25.0% 515,700	11.6% 240,425
Grazing Woodland forest	141,650	100.0% 141,650	99.9% 141,500	92.2% 130,550	65.1% 92,250	15.6% 22,050	3.2% 4,500
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	99.0% 102,325	91.5% 94,600	53.3% 55,100	18.9% 19,500
Cropping	3,179,225	100.0% 3,178,475	95.6% 3,040,675	64.3% 2,045,700	40.5% 1,286,500	16.8% 535,050	8.2% 261,300
Irrigation	566,300	100.0% 566,175	97.2% 550,225	65.4% 370,325	33.8% 191,300	10.1% 57,075	4.5% 25,300
Production native forests and plantation forests	172,825	100.0% 172,825	100.0% 172,800	97.0% 167,725	91.4% 158,025	66.2% 114,400	46.8% 80,800











